



HAZWOPER Health and Safety Plan

Former Burlington Industries Cheraw Site

Highland Industries Facility

650 Chesterfield Hwy
Cheraw, SC 29520

Prepared for
Highland Industries, Inc.
650 Chesterfield Hwy
Cheraw, SC 29520

Prepared by
AECOM
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Expiration Date (Max 1-Year from signature date)

November 6, 2018

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A handwritten signature in dark ink, appearing to read "John Paul Vigil".

11/16/2017

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A handwritten signature in dark ink, appearing to read "Lee Davis".

11/16/2017

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11/16/17

HASP SUMMARY

Note: This Summary is intended to provide key information only and cannot be substituted for reading, understanding, and complying with the full HASP. This summary may be continually updated as tasks and personnel change. Use Continuation Sheets if necessary.

Project Name:	Former Burlington Industries Cheraw Site	Project Number:	60559020
Summary Revision Date:	October 30, 2017	Client Name:	Highland Industries, Inc.
Report ALL SH&E Incidents, no matter how minor, to the Incident Hotline: 800-348-5046 Injury, Property Damage, Vehicle, Security, Regulatory Inspection, Environmental Impact, and any potentially work related injury, discomfort/ pain, or damage.			
Identify the nearest Occupational Clinic and Hospital to the site that accepts AECOM Workers Compensation Insurance (see Attachment A for instructions). If the nearest such clinic or hospital is an unreasonable distance from the site, identify nearer hospitals or clinics. Attach maps and directions to the clinics and hospitals in Attachment A .			
Occupational Clinic:	<u>McLeod Occupational Health Services</u>	Nearest Hospital:	<u>Chesterfield General Hospital</u>
Address:	149 N Ravenel St. Florence, SC 29506 (41mi, ~1hr south of Cheraw)	Address:	711 Chesterfield Hwy, Cheraw, SC 29520
Phone Number:	843-777-5146	Phone Number:	843-537-7881
Key Personnel			
Project Manager (PM):	Felix Nchako	Cell Phone:	678-209-3607
Site Supervisor (SS)	Brent Jacobs	Cell Phone	770-630-0913
Safety Officer (SSO):	Ron Hilliard	Cell Phone	770-315-9696
SHE Representative	Betsy Stone	Cell Phone:	404-831-3664
SH&E Manager Southeast Region	Lee Davis	Cell Phone:	205-276-5706
Client PM:	Tindal Evans (Plant Operations Manager)	Cell Phone:	843-337-9266
Client PM:	Cheryl Malloy (VP for Environment)	Cell Phone:	336-39-2980
List ALL Short-Service Employees, including subcontractors (<6 Months with Company in Current Area/Job Description):			
List ALL Subcontractors and their Site Safety Officers: TBD – See attached list of potential subcontractors' contact information. Subcontractors working on-site is contingent on AECOM's review and approval of subcontractor's safety plans.			
PM must positively verify subcontractors are approved in Subport for the work described. If there were any limitations/ conditions of approval, describe them and how they are being met. <input checked="" type="checkbox"/> I have verified that all subcontractors are approved in Subport, and that all conditions of approval are met. PM Name _____ PM Signature _____ Date _____			

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Figure 1 Site and Vicinity Map

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ATTACHMENTS

Attachment A: Hospital/Clinic Maps and Incident Reporting and Response Flow Chart

Attachment B: AECOM SH&E Procedures and Site-Specific Task Procedures

Attachment C: Safety Data Sheets

Attachment D: Site Orientation

Attachment E: Project/Task-Specific Pre-Job Hazard Assessments Forms

Applicable References

This Health and Safety Plan (HASP) conforms to the regulatory requirements and guidelines established in the following documents:

- Title 29, Part 1910 of the Code of Federal Regulations (29 CFR 1910), Occupational Safety and Health Standards (with special attention to Section 120, Hazardous Waste Operations and Emergency Response).
- Title 8 of the California Code of Regulations (8 CCR), with special attention to Section 5192 Hazardous Waste Operations and Emergency Response, and Section 3202, Injury Illness Prevention Program.
- 29 CFR 1926, Safety and Health Regulations for Construction.
- 8 CCR, with special attention to Sub Chapter 4, Sections 1500 - 1938 Construction Safety Orders.
- National Institute for Occupational Safety and Health/Occupational Safety and Hazards Administration/U.S. Coast Guard/U.S. Environmental Protection Agency, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Publication No. 85-115, 1985.
- The requirements in this HASP also conform to AECOM's Safety for Life Program requirements as specified in the AECOM Safety, Health and Environment (SH&E) Manual.
- Office of Solid Waste and Emergency Response (OSWER) Integrated Health and Safety Program Operating Practices for OSWER Field Activities, Pub. 9285.0-01C, dated November 2002.
- USEPA Region 4, Emergency Responder Health and Safety Manual, OSWER Directive 9285.3-12, originally dated July 2005, Updated March 2, 2017.

Site Specific References

- Administrative Settlement Agreement and Order on Consent for Removal Actions, EPA Docket No. 04-2017-3749 (AOC), October 22, 2017
- Sampling and Analysis Plan (SAP), AECOM, November 2017
- Quality Assurance Project Plan (QAPP), AECOM November, 2017
- Removal Action Work Plan (RA Work Plan or RAWP), AECOM, TBD

1.0 INTRODUCTION

This written HASP is designed to identify, evaluate, and control safety and health hazards, and to outline emergency response actions for AECOM-managed activities. This HASP must be kept on site during work activities and made available to all workers including subcontractors and other site occupants for informational purposes. AECOM subcontractors are expected to independently characterize, assess, and control site hazards created by their specific scope of work.

This section of the HASP summarizes important AECOM SH&E Procedures that apply to all Design and Consulting Services (DCS) Americas jobs. See **Attachment B** for complete copies of applicable field SH&E Procedures. This template has been designed primarily for use in the United States.

1.1 APPLICABLE REFERENCES

This Health and Safety Plan (HASP) conforms to the regulatory requirements and guidelines established in the following documents:

- Title 29, Part 1910 of the Code of Federal Regulations (29 CFR 1910), Occupational Safety and Health Standards (with special attention to Section 120, Hazardous Waste Operations and Emergency Response).
- Title 8 of the California Code of Regulations (8 CCR), with special attention to Section 5192 Hazardous Waste Operations and Emergency Response, and Section 3202, Injury Illness Prevention Program.
- 29 CFR 1926, Safety and Health Regulations for Construction.
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- National Institute for Occupational Safety and Health/Occupational Safety and Hazards Administration/U.S. Coast Guard/U.S. Environmental Protection Agency, Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, Publication No. 85-115, 1985.
- The requirements in this HASP also conform to AECOM's Safety for Life Program requirements as specified in the AECOM Safety, Health and Environment (SH&E) Manual.
- Office of Solid Waste and Emergency Response (OSWER) Integrated Health and Safety Program Operating Practices for OSWER Field Activities, Pub. 9285.0-01C, dated November 2002.
- USEPA Region 4, Emergency Responder Health and Safety Manual, OSWER Directive 9285.3-12, originally dated July 2005, Updated March 2, 2017.

Site Specific References

- Administrative Settlement Agreement and Order on Consent for Removal Actions, EPA Docket No. 04-2017-379 (AOC), dated Oct 16, 2017
- Field Sampling and Analysis Plan (FSAP), AECOM November 2017
- Quality Assurance Project Plan (QAPP), AECOM November 2017
- Removal Action Work Plan (AR Work Plan or ARWP), AECOM TBD

Project Assumptions

- This site is an AECOM-controlled site.
- Highland Plant management will assist in locating subsurface utilities, vessels, and structures located on the property and outside the scope of the utility locator service.
- No confined spaces will be entered on this project.
- No excavations will be entered.
- Work will be performed during daylight hours.

2.0 SITE INFORMATION AND SCOPE OF WORK

2.1 SITE DESCRIPTION

The Burlington Industries Cheraw site includes the northwest portion of the current Highland Industries facility, located at 650 Chesterfield Hwy, Cheraw, SC 29520; Huckleberry Park, located along the southeast side of Huckleberry Drive south of 2nd Street; and the western ditch, which runs in an approximately northern direction from the Highland Industries facility. Figure 1 provides an aerial site map of the approximate site boundaries.

2.2 SITE BACKGROUND/HISTORY

Beginning in the 1960s, Burlington Industries, Inc. (Burlington) operated a plant known as the James Fabrics Plant #0154 (James Fabrics Plant), located at 650 Chesterfield Road, Cheraw, South Carolina, that was part of its Industrial Fabrics Division. The James Fabrics Plant manufactured woven commercial fiberglass and industrial fabrics. By March 1970, records indicate that Burlington's James Fabrics Plant had established a system whereby liquid wastes from its dyeing operation were piped to a clarifier behind the main building. From there, lighter liquids were pumped into the town's sewer system and the remainder of the waste then pumped to a series of six (6) nearby settling ponds (a/k/a "drying beds") located on a parcel of land owned by Burlington that was close to the James Fabrics Plant. The solid dye wastes which remained suspended in the liquids were expected to settle-out in these ponds; at the time, it was presumed that the liquid wastes would then either be absorbed into the soil or simply evaporate. Subsequently, Burlington excavated the residues of the solidified dye waste from the drying beds and transported it to the local county landfill.

In March 1988, Highland Industries, Inc. (Highland) purchased 51.7 acres of the property located at 650 Chesterfield Road, Cheraw, South Carolina from Burlington that included what was then the James Fabrics Plant (the "Highland Plant") and began operating a textile manufacturing plant. Highland did not acquire the portion of the property Burlington used for the drying beds. Burlington retained ownership of the property on which the drying beds were located.

In 1989, Burlington excavated the remainder of the solidified sludge from the drying beds and sent the waste to a local landfill. The excavated material was sampled and shown to have not been a characteristic hazardous waste based on toxicity, but no samples were analyzed for PCBs. Subsequently, in 1990, Burlington sold the property on which the drying-beds were located and several other nearby parcels of land to a developer who subsequently subdivided the property into twenty (20) large lots; to date, eleven (11) residences have been constructed on these parcels.

In March 1970, the Chesterfield County Health Department received complaints concerning the discharge of wastes from the James Fabric Plant into an open ditch. An inspection by the State Board of Health on March 10, 1970, confirmed that Burlington was discharging "a green fluid from the James Fabrics plant" into an open ditch, which is presumed to be the Western Ditch. Records indicate, that by March 1970 Burlington's James Fabrics Plant had established a system whereby liquid wastes from its dyeing operation were piped to a clarifier behind the main building. From there, lighter liquids were pumped into the town's sewer system and the remainder of the waste then pumped to a series of six (6) nearby settling ponds (a/k/a "drying beds") located on a parcel of land owned by Burlington that was close to the James Fabrics Plant.

In October 2015, a resident contacted SCDHEC to inquire about what the resident described as "an unidentified wastewater unit." The resident's inquiry led to an investigation which revealed that the area in question was the parcel of land upon which the six (6) aforementioned former drying beds had been located. An expanded investigation by SCDHEC found several pieces of a "dark green or dark-gray rubbery material" of various sizes in or near the area of the former drying beds. An analysis of the soil and sediment samples SCDHEC collected revealed that these media contained polychlorinated biphenyls (PCB) Aroclor 1248 in concentrations above the EPA Region 4 Regional Screening level ("RSL") for PCBs.

In August 2016, SCDHEC initiated a Site Inspection designed to more fully characterize the scope and extent of the PCB contamination. Additional samples of surface and subsurface soil were collected from around the former drying beds, in the yards of residences fronting Pecan Drive and Robin Hood Drive, and at the Highland Plant; sediment samples were also collected from the Western Ditch and the associated system of downstream creeks. Analysis of soil samples collected from the northwestern corner of the Highland Plant revealed PCB at concentrations above RSLs. In addition, analysis of samples of sediments collected from the Western Ditch, located on or adjacent to the Highland Plant, revealed concentrations of PCBs above RSLs. For the soil samples collected from the Highland Plant, concentrations of PCBs were found to be highest at the western property boundary near

the Western Ditch and generally within about one hundred fifty (150) feet of the ditch. Contamination in the sediment samples taken from the Western Ditch in that area were relatively uniform, with concentrations of both PCB tending to be in excess of the RSLs. At Huckleberry Park, analysis of soil samples taken from a generally grassy area and analysis of soil samples taken from under swing sets at the park indicated PCB concentrations above RSLs. In light of these data, the Town of Cheraw removed the swings and officially closed Huckleberry Park to the public. An analysis of soil excavated as part of a town storm water project located on the Town Lot revealed concentrations of in excess of RSLs.

The analysis of soil samples collected from the yards of residences located on parcels in the Pecan Drive community bordering the Western Ditch, including the Residential Properties fronting Pecan Drive, revealed elevated concentrations of PCBs. Soil samples from at least six (6) of these residential parcels were found to contain significant concentrations of PCBs.

The analysis of soil samples taken from the yards of two (2) residences fronting Robin Hood Drive and bordering the eastern boundary of the Western Ditch in the Sherwood Forest community revealed PCB concentrations above RSLs. In addition, small portions of a "dark gray rubbery material" closely resembling the material that had been observed at or near the six (6) drying beds were found on parcels of undeveloped residential property fronting Robin Hood Drive in the Sherwood Forest community. Analysis of these "dark gray rubbery materials" revealed the presence of PCB above RSLs. The parcels along the Western Ditch fronting Robin Hood drive where elevated concentrations of PCBs were found are included among the "Residential Properties" identified as part of the Cheraw Site.

2.3 CLIENT OR THIRD-PARTY OPERATIONS AT SITE

The removal action site is composed on three locations, the northwestern portion of the Highland Plant, the Western Ditch, and Huckleberry Park. The Highland Industries facility is an active industrial facility. Work to be performed on or within the Highland Plant area, will be coordinated with plant personnel. Specific plant health and safety requirements are incorporated into this HASP. Huckleberry Park has been closed and roped off by the City of Cheraw. The Western Ditch is located behind residential properties. Silt fencing installed by the USEPA has delineated the area where residents should not enter. No third-party activities occur within the Western Ditch.

2.4 SCOPE OF WORK

The general scope of work is to conduct a soil and sediment assessment of the site, primarily using hand auguring and a Geoprobe rig. Based on the results of soil sample chemical analysis, excavation activities will be planned and conducted. The scope of work for the soil and sediment assessment of the site is detail further in the referenced FSAP and RA Work Plan.

AECOM field activities will include soil/sediment collection, staking sample locations, overseeing subcontractor's use of Geoprobe drilling rigs, and overseeing the clearing and grubbing of the soil and sediment excavation areas within the Highland Plant, Western Ditch, and Huckleberry Park removal action area. Overseeing soil and sediment excavation activities, and overseeing restoration of the removal action areas.

Detailed scopes of work for the soil and sediment assessment and excavation activities are/will be provided in the referenced FSAP and RA Work Plan.

2.5 SCOPE OF WORK RISK ASSESSMENT

- ☐ Low Risk (examples: non-intrusive work, occasional exposure and/or low risk hazards)
- ☐ Medium Risk (examples: intrusive work, heavy equipment use, frequent exposure and/or moderate hazards)
- ☒ High Risk (examples: complicated scope, large/ multiple work crews, and/or constant exposure to hazards).
- The following tasks/ hazards automatically trigger high risk ranking. Check all which apply. Include hazard mitigation procedures later in the appropriate Physical, Chemical, or Environmental section of the HASP.

<input type="checkbox"/> Asbestos removal/ contact	<input type="checkbox"/> Ordinance, Munitions, Explosives use
<input type="checkbox"/> ATV use	<input type="checkbox"/> Pile Driving
<input type="checkbox"/> Bridge/dam Inspections/ Snooper Truck use	<input type="checkbox"/> Radiation or Radioactive Instrument use
<input type="checkbox"/> Confined Space	<input type="checkbox"/> Remote location or lone worker

<input type="checkbox"/> Cranes and Rigging use <input type="checkbox"/> Demolition <input type="checkbox"/> Diving- scientific or commercial <input type="checkbox"/> High speed traffic exposure <input type="checkbox"/> Hot Work <input type="checkbox"/> Conditions Immediately Dangerous to Life or Health (IDLH) <input type="checkbox"/> Laboratory Operations <input type="checkbox"/> LOTO or Live Energy Source work <input type="checkbox"/> On-rail/ Near Rail work	<input type="checkbox"/> Respirator use (does not include dust mask) <input type="checkbox"/> Scaffolding use <input checked="" type="checkbox"/> Use or exposure to toxic chemicals <input checked="" type="checkbox"/> Trenching/ Excavation <input type="checkbox"/> Tunnel/ Underground work <input type="checkbox"/> UXO/ MMR <input type="checkbox"/> Work at Heights > 4ft. <input checked="" type="checkbox"/> Work at angle >30 deg. <input type="checkbox"/> Work On/Over Water
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3.0 AECOM SAFETY HEALTH AND ENVIRONMENT PROGRAM

3.1 AECOM POLICY



Purpose

This policy establishes the framework to attain best-in-class Safety, Health and Environmental (SH&E) performance for AECOM's employees in the global marketplace.

Commitment

AECOM is committed to exceptional levels of performance in protecting its people and the environment. As stated in our Core Values, keeping our people safe is our most important measure of success. We strive to be the beacon of safety excellence in the industries and global communities in which we work.

To advance our SH&E program, we are committed to:

- Zero work-related injuries to AECOM employees and protection of the environment as a result of our activities.
- Providing a highly effective SH&E management system that drives continual review and improvement.
- Meeting client requirements and properly incorporating all safety, health and environmental rules and regulations at the local, state, provincial and national levels.
- Developing an exceptional safety culture where our people embrace ownership for the safety of themselves and others.
- Substantial improvements toward our goals of pollution prevention, resource conservation and environmental sustainability.
- Setting and meeting aggressive SH&E performance goals and Core Value Metrics to promote continuous improvement.
- Working with employees and business partners in order to continuously improve SH&E performance.
- Recognizing and celebrating those who contribute to excellent SH&E performance.
- Striving to make AECOM the provider of choice for the safe execution of design, build, finance, operate and maintenance work globally.

The commitment to this policy by the leadership, management and employees of AECOM provides the foundation for a safe workplace, operational excellence and long-term business success.

Expectations

Safety is a core value and a key to our success. We demand continuous improvement in our journey toward a zero incident culture, where everyone is committed to safety, health and environmental excellence.

To that end, we demand:

- Our leaders, managers, supervisors and employees demonstrate their commitment in their actions and decisions to assure that every person goes home safe every day.
- Our employees embrace safety as a core value both on and off the job.
- Each employee is committed to his/her own safety and that of his/her fellow employees.
- We will incorporate Life-Preserving Principles into our work planning and execution.
- We proactively and aggressively identify, manage and eliminate hazards in the workplace.
- We train and prepare our people to have the knowledge, skills, competency and equipment required to work safely.
- We stop our employees from working if the work cannot be executed safely or if conditions or behaviors on the work activity are unsafe.
- All employees immediately report safety, health and/or environmental incidents, near-misses, unsafe conditions, and at-risk behaviors to their supervisor; and that we diligently work to correct the problem.

Our SH&E expectations will be accomplished by the demonstrated leadership of management, compliance with regulatory requirements and participation of AECOM personnel.

Communication

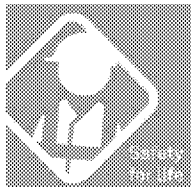
This Policy will be reviewed annually to ensure it meets the needs of the company, and will be made available to all persons under the control of the company.

Sincerely:


Michael S. Burke
Chairman and Chief Executive Officer

04 March 2016
Date

3.2 SAFETY FOR LIFE



"Safety for Life" is a comprehensive integrated AECOM Safety Management System that drives our nearly 100,000 employees toward AECOM's commitment to achieving zero work-related injuries and/or illnesses; preventing damage to property and the environment; and maintaining an environmentally friendly and sustainable workplace. Our Safety for Life program is supported by nine Life Preserving Principles that apply to all AECOM activities.

3.3 LIFE PRESERVING PRINCIPLES

Demonstrated Management Commitment

Our Executive, senior and project managers will lead the SH&E improvement process and continuously demonstrate support and commitment.

Employee Participation

Our employees will be encouraged and empowered to become actively engaged in our safety processes through their active participation in safety committees, training, audits, observations and inspections. Employees will be encouraged to participate in health initiatives and adopt a healthy lifestyle.

Budgeting and Staffing for Safety

Our safety staff will be competent, fully trained and qualified to provide technical resources to our internal and external clients. A budget to support safety activities will be included in project proposals.

Pre-Planning

Our design, engineering, project and construction management staff will deploy effective risk mitigation efforts to design, plan and build safety into every project. Pre-Project and Pre-Task planning will be an effective tool in protecting our employees and the environment.

Contractor Management

Our project staff will work closely with our sub-consultants, subcontractors, contractors and Joint Venture Partners to provide a safe work environment for employees and members of the public. Our goal of SH&E performance excellence will be equally shared by all project participants.

Recognition and Rewards

Our employees will be recognized for their efforts in working safely and their support of our safety efforts.

Safety Orientation and Training

Our employees will be provided with effective safety training in order to identify and mitigate hazards in the workplace to prevent injuries to themselves and others who may be affected by their actions.

Incident Investigation

Our managers and safety professionals will investigate all recordable incidents and serious near misses to identify contributing factors and root causes in order to prevent a recurrence. Lessons learned shall be identified, communicated and implemented.

Fit for Duty

Our employees are responsible to report to work each day fit for duty and not to pose a health and safety hazard to themselves or others.

3.4 DRIVING AND VEHICLE SAFETY

The proper operation of vehicles is critical to protecting the safety of AECOM employees and subcontractors. Drivers face numerous hazards while operating vehicles. Some of the hazards include collision with another vehicle, collision with a fixed object, vehicle break down or failure, or falling asleep or becoming otherwise incapacitated while driving. All employees will adhere to Driving procedure S3AM-005-PR, which includes the following key practices:

- **Authorized Drivers** - Managers must authorize drivers following evaluation of driver criteria to drive and maintain an AECOM-owned, leased or rented vehicle, a client or customer-owned vehicle, or a personal vehicle operated in the course of conducting AECOM business.
- **Electronic Devices Prohibited** - AECOM prohibits use of all portable electronic devices while operating a motor vehicle/ equipment which includes being stopped at a traffic light or stop sign. This includes cell phones, two-way radios and other items whether hand-held or hands-free. Electronic devices include, but are not limited to, all mobile phones, pagers, iPods, MP3s, GPS, DVD players, tablets laptops and other portable electronic devices that can cause driver distraction. Hands-free device use is not allowed.
 - GPS units and devices used for navigation may only be used if factory installed or secured to the vehicle with a bracket that allows the driver to view the image without having to take their eyes off the road. Electronic devices shall be setup for operation prior to commencing driving activities and shall not be changed by the driver while driving.

- **Vehicle Inspections** - The driver shall conduct pre-trip vehicle inspections prior to each trip. A vehicle inspection checklist, S3AM-005_FM2, can be used to guide and document the inspection process. Vehicle inspection is to include a 360-degree walk around and visual inspection under the vehicle for leaks and obstructions prior to moving the vehicle.
- **Training** - All drivers shall complete defensive driver training. Additional training (i.e., hands-on defensive driver training) may apply for medium and high-risk drivers; see Driving procedure S3AM-005-PR and SHE Training procedure S3AM-003-PR for more details.
- **Journey Management Plan** - Drivers who undertake trips in excess of 250 miles (400 kilometers) one way, drive in remote or hazardous areas, or when otherwise deemed necessary, shall develop and document a Journey Management Plan using S3AM-005-FM1 or equivalent.
- **Secure Loads** - Cargo is only to be carried within the passenger compartment of a vehicle when segregated and restrained to prevent objects from becoming distractions, obstructions or projectiles to occupants should emergency vehicle maneuvers be required (e.g., harsh braking or crash). All goods transported on flatbed trucks or in pickup beds must be securely fastened to prevent them from becoming hazards. All applicable laws and regulations regarding securing of loads must be met. It is prudent to check the load after a few miles to ensure that load has not shifted or loosened prior to completing the remainder of the trip.
- **Backing Up** - Reversing the vehicle is to be avoided if at all possible. If backing up is necessary, use the following guidelines:
 - Pre-plan all vehicle movements.
 - If the pull-through method of parking is not possible, drivers will scan parking spot/area for hazards and back in; thereby, facilitating departure where the first move is forward.
 - A light tap of the horn should be used to alert others of your intention to back up.
 - Avoid tight spaces.
 - Vehicles over 10,000 pounds gross vehicular weight are required to have a competent spotter in place when backing. A competent spotter is one that has received spotter training.
 - All vehicles shall have a competent spotter in place when backing in an active work zone. Parking and public access areas are recommended but not required to have a spotter.

3.5 FITNESS FOR DUTY

One of AECOM's nine Life-Preserving Principles is Fitness for Duty (see Fitness for Duty procedure S3AM-008-PR). Fitness for Duty means that individuals are in a state (physical, mental, and emotional) that enables them to perform assignments competently and in a manner that does not threaten the health and safety of themselves or others. On certain projects or for specific tasks, fit for duty certifications may be requested of medical providers by SH&E Managers or Human Resources (HR). Employees should report to work fit for duty and unimpaired by substances or fatigue. Supervisors must observe their employees and work with the employee, SH&E staff, and HR to address deficiencies. AECOM will not tolerate retaliation against any employee for filing a complaint or concern regarding their fitness for duty or participating in any way in an investigation.

3.5.1 Medical Surveillance

AECOM's S3AM-128-PR, Medical Screening and Surveillance, details the requirements to participate in a medical monitoring program. Medical Surveillance provides a streamlined process to determine if employees meet the physical requirements to perform assigned duties as defined by applicable regulations. It is also designed to provide a means to collect data relevant to exposure to chemical and physical agents for the protection of the workers and to confirm the effectiveness of health and safety programs.

3.5.2 Fatigue

One aspect of fit for duty is fatigue management. AECOM has developed procedures that limit work periods or requires additional rest under certain circumstances, including during long-distance travel or when working at high altitudes. These procedures also set limits on extended work periods of 14 hours per day or 60 hours per week. A

fatigue management plan is required if longer working hours are necessary (see Fatigue Management Procedure [S3AM-009-PR](#)).

3.5.3 Substance Abuse

Drug and alcohol abuse pose a serious threat to the health and safety of employees, clients, and the general public as well as the security of our job sites, equipment and facilities. AECOM is committed to the elimination of illegal drug use and alcohol abuse in its workplace and regards any misuse of drugs or alcohol by employees to be unacceptable. AECOM Substance Abuse Prevention Procedure ([S3AM-019-PR](#)) prohibits the use, possession, presence in the body, manufacture, concealment, transportation, promotion or sale of the following items or substances on company premises. Company premises refer to all property, offices, facilities, land, buildings, structures, fixtures, installations, aircraft, automobiles, vessels, trucks and all other vehicles and equipment - whether owned, leased, or used.

- Illegal drugs (or their metabolites), designer and synthetic drugs, mood or mind altering substances, and drug use related paraphernalia unless authorized for administering currently prescribed medication;
- Controlled substances that are not used in accordance with physician instructions or non-prescribed controlled substances; and
- Alcoholic beverages while at work or while on any customer- or AECOM-controlled property.

This policy does not prohibit lawful use and possession of current medication prescribed in the employees name or over-the-counter medications. Employees must consult with their health care provider about any prescribed medication's effect on their ability to perform work safely and disclose any restrictions to their supervisor.

Although some states may pass laws legalizing medical or recreational marijuana use, the use, sale, distribution and possession of marijuana are violations of federal law and AECOM policy, and will subject an employee to disciplinary action up to and including termination in accordance with controlling law.

3.6 HAND SAFETY

The hands are exposed to hazards more than any body part. SH&E Hand Safety Procedure [S3AM-317-PR](#) describes requirements and best practices including these notable practices:

- **All personnel shall have gloves in their immediate possession 100%** of the time when in a shop or on a work site. Gloves that address the hazard shall be worn when employees work with or near any materials or equipment that present the potential for hand injury due to sharp edges, corrosives, flammable and irritating materials, extreme temperatures, splinters, etc. Use the Gloves Needs Assessment ([S3AM-317-FM1](#)) to help determine the appropriate glove for the hazard(s).
- **Fixed open-blade knives are prohibited** from use during the course of AECOM work. Examples of fixed open-blade knives include pocket knives, multi-tools, hunting knives, and standard utility knives. For more information about cutting tools, see [S3AM-317-ATT1](#) Safe Alternative Tools.

3.7 HAZARD COMMUNICATION

Hazardous materials that may be encountered on-site as existing environmental or physical/health contaminants are addressed in this HASP. Their properties, hazards, and associated required controls will be communicated to all affected staff and subcontractors in accordance with the requirements of AECOM Procedure [S3AM-115-PR1](#) Hazardous Materials Communication including these key elements:

- All personnel shall be briefed on the hazards of any chemical product they use and shall be aware of and have access to the Safety Data Sheets (SDS).
- All containers on site shall be properly labeled to indicate their contents. Labeling on any containers not intended for single-day, individual use shall contain additional information indicating potential health and safety hazards (flammability, reactivity, etc.).

In addition, any employee or organization (contractor or subcontractor) intending to bring any hazardous material onto this AECOM-controlled work site must first provide a copy of the item's SDS to the Site Supervisor or Site Safety Officer for review and filing. The Site Supervisor or Site Safety Officer will maintain copies of all SDS on site and in **Attachment C**. SDS may not be available for locally obtained products, in which case an alternate form of product hazard documentation will be acceptable.

3.8 HAZARDOUS MATERIAL HANDLING AND WASTE MANAGEMENT

If hazardous, solid, and/or municipal wastes are generated during any phase of the project, the waste shall be accumulated, labeled, and disposed of in accordance with applicable Federal, State, Provincial, Territorial and/or local regulations and SH&E Procedure S3AM-116-PR Hazardous Materials Shipping. A site-specific Entity Letter may be required for the site/client; if so, only persons named on the entity letter are allowed to sign waste shipping papers "**on behalf of [client name]**". Any individual signing shipping papers must have valid Department of Transportation and Resource Conservation and Recovery Act training for waste shipment. Consult the [H2M/H2V & TDG page](#) on ecosystem or the SH&E Manager for further guidance on AECOM and regulatory procedures and training requirements.

3.9 HOUSEKEEPING AND PERSONAL HYGIENE

Basic housekeeping requirements for offices and work sites, as well as personal hygiene and sanitation standards can be found in S3AM-013-PR Housekeeping. Inspections should be performed at the regular interval specified below. The housekeeping inspection form [S3AM-013-FM1](#) is available for use.

Complete the table below regarding site-specific Housekeeping and Personal Hygiene requirements:

Housekeeping: Inspection Frequency: Daily	Inspector: SS/ SSO or designee
Eating, Drinking, Smoking: Permitted only in designated area(s) located outside the containment area and outside the facility.	
Handwashing: Water, soap and paper towels or equivalent supplies are located at the site staging area. Site staff will wash hands and face after completing work activities and prior to breaks or meals.	
Toilets are located at the site staging area. NOTE: A minimum of one toilet must be provided for every 20 personnel on site. For mobile crews where work activities and locations permit transportation to nearby toilet facilities on-site facilities are not required.	
Water is located at each work truck and/or at the staging area. A water supply meeting the following requirements will be utilized: <i>Potable Water</i> - An adequate supply of potable water will be available for field personnel consumption. Potable water can be provided in the form of water bottles, canteens, water coolers, or drinking fountains. Disposable drinking cups for single use and a waste receptacle will be provided as needed. Water containers will be refilled daily and disinfected regularly. Potable water containers will be properly identified in order to distinguish them from non-potable water sources. <i>Non-Potable Water</i> - Non-potable water may be used for hand washing and cleaning activities. Non-potable water will not be used for drinking purposes. All containers of non-potable water will be marked with a label stating " Non-Potable Water, Not Intended for Drinking Water Consumption "	
Illumination will not be necessary as all work will be conducted during daylight hours.	

3.10 LONE WORKER

AECOM discourages employees from working alone (i.e. where AECOM personnel are out of visual and audio range of others) when performing field tasks (see SH&E Procedure S3AM-314-PR, [Working Alone](#)). It is not expected that a lone work is required. If lone work is to be performed, a communications/check-in plan must be developed and implemented using the table below.

Lone Worker	TBD, Worker Cell Phone
Justification	It may be necessary to conduct limited follow-up field work after the initial sampling results are returned.
Check-In Requirement	Upon arriving at the site, let facility Operations Manager and Check-In Contact know you are there. Call once during the day (lunchtime) to update on working conditions, and at the end of the day. Leave a voicemail and/or text if no one answers.

Check-In Contact	Felix Nchako, 678-209-3607 or designee
Hazard Summary	Slip trip falls. Vehicle accident.
Response Plan	Call the lone worker → call the facility's Operations Manager to locate the lone worker → contact the lone worker's hotel and look for them → call the local police department (843-537-7868)

3.11 SAFETY OBSERVATIONS

Safety observations are observations made by employees or subcontractors of a condition or behavior which could contribute to an incident, prior to the incident occurring. Observations can also identify positive behaviors or interventions which contribute to the prevention of incidents. Large, long-term projects may benefit from the use of LifeGuard to track and trend observations on a site level. All other projects should log their observations using IndustrySafe. Both reporting systems can be accessed on any safety page of ecosystem. Or the QR codes below can be used while off the AECOM network from a smartphone/ device.



3.12 SHORT SERVICE EMPLOYEE

A Short Service Employee is an employee with fewer than 6 months experience working on field projects or an employee who has not completed the required training or received required certifications (see the Short Service Employee procedure, [S3AM-002-PR](#)). The Project Manager will identify all Short Service Employees working on the project, and each Short Service Employee will be assigned to an experienced team member so all activities may be monitored. Short Service Employees shall be easily identified in the field environment, such as through wearing a specific colored hardhat, a manufacturer-approved orange stripe applied to their hardhat, or be clearly identified by some other system. Any new employee shall wear the designated Short Service Employee identifier until the Project Manager determines the employee has the knowledge, skills, and ability related to the specific hazard on the project.

3.13 STOP WORK AUTHORITY

AECOM empowers and expects all employees to exercise their Stop Work Authority (see Stop Work Authority Procedure [S3AM-002-PR](#)) if an incident appears imminent, or when hazardous behaviors or conditions are observed. A stop work request can be informal if the situation can be easily corrected, or may require shutting down operations if revised procedures are necessary to mitigate the hazard. If an AECOM employee observes an imminently hazardous situation on a site controlled by others (i.e., a client-managed contractor), the employee can always stop work for themselves by removing themselves from the situation. Employees also may attempt to stop work to avoid allowing the contractor to come to harm by immediately notifying the contractor foreman or site engineer, or if necessary, the client or party managing the contractor.

No employee should object to the issuance of a stop-work request, nor can any disciplinary action be levied against the employee. All employees must agree that the situation has been mitigated before resuming work. No employee will be disciplined for refusing to work if they feel it is unsafe.



4.0 ROLES AND RESPONSIBILITIES

Roles and responsibilities for the project team are defined in SH&E Procedure S3AM-209-PR, Safe Work Standards and Rules. The Project Manager (PM) is ultimately responsible for the development of this HASP and establishing a budget to implement the controls and training required. The Project Manager is also responsible for ensuring that the plan is implemented, that appropriate documentation is generated, and that records are maintained. The SH&E Manager is responsible for reviewing and approving this HASP, and assisting with other SH&E matters upon request. A Site Safety Officer may be appointed to oversee implementation of the HASP in the field. All project team members are responsible for reviewing and abiding by this HASP, performing daily (or more frequent) task hazard assessments, stopping work when necessary to correct unsafe behaviors or conditions, and reporting incidents promptly to the PM and AECOM Incident Reporting Hotline (Incident Hotline 800-348-5046).

4.1.1 Project Manager

The Project Manager has overall management authority and responsibility for all site operations, including safety. The Project Manager will provide the site supervisor with work plans, staff, and budgetary resources, which are appropriate to meet the safety needs of the project operations. Some of the Project Manager's specific responsibilities include:

- Verifying that personnel, to whom this HASP applies, including AECOM subcontractors, have received a copy of it, with ample opportunity to review the document and to ask questions.
- Providing the concurring SH&E Manager with updated information regarding conditions at the site and the scope of site work if changes occur that will affect the accuracy of this HASP.
- Providing adequate authority and resources to the Site Supervisor or Site Safety Officer to allow for the successful implementation of all necessary SH&E Procedures.
- Maintaining regular communications with the Site Supervisor or Site Safety Officer and, when necessary, the AECOM Client SH&E Program Manager.
- Coordinating the activities of AECOM subcontractors and ensuring that they are aware of the pertinent health and safety requirements for these projects, when applicable.
- Conducting Safety System Auditing by way of Management Site Visits and/or Project Manager Self Assessments on a regular basis.
- Approving amendments to the HASP (in conjunction with the Site Supervisor or Site Safety Officer).
- Coordinating activities with the client as needed to ensure the safe implementation of this HASP.

4.1.2 Site Supervisor

The Site Supervisor has the overall responsibility and authority to direct work operations at the job site according to the provided work plans and HASP. The Project Manager may act as the Site Supervisor while on site. The Site Supervisor's responsibilities include:

- Discussing deviations or drift from the work plan with the Site Safety Officer and Project Manager.
- Discussing safety issues with the Project Manager, Site Safety Officer, and field personnel.
- Assisting the Site Safety Officer with the development and implementation of corrective actions for site safety deficiencies.
- Assisting the Site Safety Officer with the implementation of this HASP and ensuring compliance.
- Assisting the Site Safety Officer with inspections of the site for compliance with this HASP and applicable SH&E Procedures.
- Reviewing Job Safety Analyses (JSAs) and Task Hazard Assessments (THAs) with the work crew.
- Reporting incidents and ensuring incidents and observations are logged into Lifeguard or IndustrySafe.

- Verifying that all operations are in compliance with the requirements of this HASP, and halting any activity that poses a potential hazard to personnel, property, or the environment.
- Temporarily suspending individuals from field activities for infractions against the HASP pending consideration by the Site Safety Officer, the SH&E Manager, and the Project Manager.
- Assisting Site Safety Office with development of an emergency responders (911) action plan and coordinating job activity tasks and work locations with emergency responders in a pre-job briefing.

4.1.3 Site Safety Officer

The Site Safety Officer supports the Site Supervisor in providing a safe work environment. Not all sites will have a designated Site Safety Officer; the decision should be made by the Project Manager and SH&E Manager taking into consideration the complexity and risks of the scope of work. The Site Supervisor may act as the Site Safety Officer on sites without one. The Site Safety Officer's responsibilities include:

- Updating the site-specific HASP to reflect changes in site conditions or the scope of work. HASP updates must be reviewed and approved by the SH&E Manager.
- Inspecting the site for compliance with this HASP and the SH&E Procedures using the appropriate field audit inspection checklist found in IndustrySafe.
- Coordinating with Site Supervisor to review JSAs and THAs with the work crew.
- Assisting as needed to report incidents and verify that incidents and observations are logged into Lifeguard or IndustrySafe.
- Working with the Site Supervisor and Project Manager to develop and implement corrective action plans to correct deficiencies discovered during site inspections. Deficiencies will be discussed with project management to determine appropriate corrective action(s).
- Contacting the SH&E Manager for technical advice regarding safety issues.
- Determining emergency evacuation routes, establishing and posting local emergency telephone numbers, and arranging emergency transportation.
- Checking that all site personnel and visitors have received the proper training, orientation and medical clearance prior to entering the site.
- Establishing controlled work areas (as designated in this HASP or other safety documentation).
- Facilitating or co-leading daily tailgate meetings and maintaining attendance logs and records.
- Discussing potential SH&E hazards with the Site Supervisor, the SH&E Manager and the Project Manager.
- Selecting an alternate Site Safety Officer by name and informing him/her of their duties, in the event that the Site Safety Officer must leave or is absent from the site.
- Verifying that all operations are in compliance with the requirements of this HASP.
- Issuing a "Stop Work Order" under the conditions set forth in this HASP.
- Temporarily suspending individuals from field activities for infractions against the HASP pending consideration by the SH&E Manager and the Project Manager.
- Developing an emergency responders (911) action plan and coordinating job activity tasks and work locations with emergency responders in a pre-job briefing.

4.1.4 Employees

Responsibilities of employees associated with this project include, but are not limited to:

- Understanding and abiding by the SH&E Procedures specified in the HASP and other applicable safety policies, and clarifying those areas where understanding is incomplete.
- Providing feedback to SH&E management for continuous improvement relating to omissions and modifications in the HASP or other safety policies and procedures.
- Notifying the Site Supervisor or Site Safety Officer of unsafe conditions and acts.
- Stopping work if there is doubt about how to safely perform a task or if unsafe acts or conditions are observed (including subcontractors or team contractors).
- Speaking up and refusing to work on any site or operation where the SH&E procedures specified in this HASP or other safety policies are not being followed.
- Contacting the Site Supervisor or Site Safety Officer or the SH&E Manager at any time to discuss potential concerns.

4.1.5 Subcontractors

The requirements for subcontractor selection and subcontractor safety responsibilities are outlined in AECOM Procedure *S3AM-213-PR Subcontractor Management*. Each AECOM subcontractor is responsible for assigning specific work tasks to their employees. Each subcontractor's management will provide qualified employees and allocate sufficient time, materials, and equipment to safely complete assigned tasks. In particular, each subcontractor is responsible for equipping its personnel with any required personnel protective equipment (PPE) and all required training.

AECOM considers each subcontractor to be an expert in all aspects of the work operations for which they are tasked to provide, and each subcontractor is responsible for compliance with the regulatory requirements that pertain to those services as well as all other requirements applicable to their work. Each subcontractor is expected to perform its operations in accordance with its own unique safety policies and procedures, in order to ensure that hazards associated with the performance of the work activities are properly controlled. Copies of any required safety documentation for a subcontractor's work activities will be provided to AECOM for review prior to the start of on-site activities.

Hazards not listed in this HASP but known to any subcontractor, or known to be associated with a subcontractor's services, must be identified and addressed to the AECOM Project Manager or the Site Supervisor prior to beginning work operations. The Site Supervisor or authorized representative has the authority to halt any subcontractor operations, and to remove any subcontractor or subcontractor employee from the site for failure to comply with established health and safety procedures or for operating in an unsafe manner.

4.1.6 Visitors

Authorized visitors (e.g., client representatives, regulators, AECOM management staff, etc.) requiring entry to any work location on the site will be briefed by the Project Manager, Site Supervisor, or Site Safety Officer on the hazards present at that location. Visitors will be escorted at all times at the work location and will be responsible for compliance with their employer's health and safety policies. In addition, this HASP specifies the minimum acceptable qualifications, training and PPE that are required for entry to any controlled work area; visitors must comply with these requirements at all times.

If the site visitor requires entry to any exclusion zone (EZ), but does not comply with the above requirements, all work activities within the EZ must be suspended.

Unauthorized visitors, and visitors not meeting the specified qualifications, will not be permitted within established controlled work areas.

5.0 TRAINING AND DOCUMENTATION

The following sections describe the standard practices or programs that AECOM will establish to prepare employees to perform work safely and consistent with AECOM policy and Procedures.

5.1 HASP/SITE ORIENTATION

The Project Manager shall conduct a project/site-specific HASP orientation prior to the start of field operations, with support as needed by the SH&E Manager, Site Safety Officer, or Site Supervisor. This meeting will involve representatives from all organizations with a direct contractual relationship with AECOM on the job site. Minimum items to be covered are listed in **Attachment D**. Participants will then sign the HASP Personnel Acknowledgement register at the end of the HASP.

5.2 DAILY TAILGATE MEETINGS AND THA REVIEW

The Site Supervisor, Site Safety Officer or designee shall facilitate DAILY tailgate meetings to discuss the specific requirements of this HASP, review the applicable JSAs and/or complete THAs prior to the commencement of daily project activities. Attendance at the daily tailgate meeting is mandatory for all employees and subcontractors at the site contracted to AECOM. Simultaneous operations are encouraged to attend each other's tailgate meetings or at the very least the supervisors shall discuss the coordination of activities and associated hazards of each other's tasks. The supervisor will then convey the information to the work crew. The Tailgate Meeting must be documented by the Site Supervisor or Site Safety Officer on a Daily Tailgate Meeting form, a blank copy of which is included in **Attachment E**.

5.3 WORKER TRAINING AND QUALIFICATIONS

All personnel at this site must be qualified and experienced in the tasks they are assigned. SH&E Training Procedure S3AM-003-PR establishes the general training requirements for AECOM employees. In addition, S3AM-117-PR, Hazardous Waste Operations, explains the HAZWOPER training and S3AM-128-PR, Medical Screening and Surveillance, details the medical surveillance requirements.

Check all required training on the table below. Verify training records of employees and subcontractors.

Site Specific Training Requirements	
Training	Applies to
<input checked="" type="checkbox"/> HASP Orientation	All Employees and Subcontractors
<input checked="" type="checkbox"/> HAZWOPER 40 –HR	On HAZWOPER sites, in EZ, exposed to hazardous contamination
<input checked="" type="checkbox"/> HAZWOPER Supervisor	Employees managing others in HAZWOPER activities
<input type="checkbox"/> Fit Test/ Respiratory Protection	Employees needing to wear respirators
<input checked="" type="checkbox"/> Hazardous Materials Shipping	Employee responsible for shipping HZM/HZW/DG and/or signing manifests
<input checked="" type="checkbox"/> Annual Medical Surveillance/ Clearance	Employees working in an exclusion zone and the regulatory required exposure limit is exceeded for 30 or more days a year
<input type="checkbox"/> Biennial Medical Surveillance/ Clearance	Working in an exclusion zone more than 30 days a year and the regulatory required exposure limit is not exceeded
<input type="checkbox"/> OSHA 10 Hr Construction	Employees working near heavy equipment
<input checked="" type="checkbox"/> OSHA 30 Hr Construction	Supervisor/SSO overseeing work with heavy equipment
<input type="checkbox"/> Local requirements:	
<input checked="" type="checkbox"/> Client requirements: TBD and coordinated with Highland Plan management prior to start of work	All Employees and Subcontractors

5.3.1 Competent Person

A competent person is an employee who, through education, training and experience, has knowledge of applicable regulatory requirements, is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

AECOM's Competent Person Designation Procedure, S3AM-202-PR, explains the roles, responsibilities and procedures of naming a competent person. Complete the table below and include a S3AM-202-FM1 Competent Person Designation Form for each AECOM competent person (subcontractors to use an equivalent process).

These activities require a competent person. Mark all that apply and list the name of the person.

	Activity	Name of Person
<input type="checkbox"/>	Asbestos	
<input type="checkbox"/>	Assured Equipment Grounding Conductor	
<input type="checkbox"/>	Blasting & Explosives	
<input type="checkbox"/>	Concrete & Masonry Construction	
<input type="checkbox"/>	Confined Spaces	
<input type="checkbox"/>	Control of Hazardous Energy (Lockout-Tagout)	
<input type="checkbox"/>	Crane Assembly / Disassembly	
<input type="checkbox"/>	Cranes & Derricks	
<input type="checkbox"/>	Demolition	
<input type="checkbox"/>	Electrical Wiring Design & Protections	
<input type="checkbox"/>	Elevated Work Platforms & Aerial Lifts	
<input type="checkbox"/>	Fall Protection	
<input type="checkbox"/>	Hearing Protection	
<input checked="" type="checkbox"/>	Heavy Equipment	Brent Jacobs or designee
<input type="checkbox"/>	Ionizing Radiation	
<input type="checkbox"/>	Lead	
<input type="checkbox"/>	Material Hoists & Personnel Hoists	
<input type="checkbox"/>	Respiratory Protection	
<input type="checkbox"/>	Rigging Equipment	
<input type="checkbox"/>	Scaffolds	
<input type="checkbox"/>	Stairways & Ladders	
<input type="checkbox"/>	Steel Erection	
<input checked="" type="checkbox"/>	Trench & Excavations	Brent Jacobs or designee
<input type="checkbox"/>	Underground Construction	
<input type="checkbox"/>	Welding & Cutting	

6.0 HAZARD ASSESSMENT AND CONTROL

AECOM has adopted an approach to hazard assessment and control that incorporates both qualitative and quantitative methods to identify hazards and the degree to which they may impact employees and AECOM operations. See [S3AM-209-PR, Risk Assessment and Management](#), for details regarding AECOM's process.

This approach involves the following:

6.1 SH&E PROCEDURES

All AECOM SH&E procedures, in their controlled copy version, are available on the [internal SH&E Policy and Procedures ecosystem page](#). Programmatic procedures referenced in this document (for example SH&E Training) do not need to be printed for inclusion in this HASP. Only procedures that are needed for field activity reference and application MUST be printed in full and included in this HASP. The applicable field procedures checklist is in the Physical Hazards section below and procedures are included in **Attachment B**.

6.2 PRE-JOB HAZARD ASSESSMENT/ JOB SAFETY ANALYSIS

A pre-job hazard assessment or JSA is to be developed for each discrete task planned as part of the project. This assessment lays out the steps of the job, potential hazards, and mitigation measures. Form [S3AM-209-FM4](#) or a client required equivalent may be used. A blank copy is included in **Attachment E**.

6.3 TASK HAZARD ASSESSMENT

The THA is a handwritten field form which is based on "Stop and Think" as the first thing you do before starting work activities often paired with the daily tailgate meeting or work permit issuance. Not all risks can be anticipated in this HASP or the pre-job hazard assessment process; therefore, the THA is used to assess, mitigate, and document the site-specific conditions and changes to the hazard profile prior to and throughout the work task. Proper implementation of the THA program protects worker health and safety. A blank THA form is included in **Attachment E**. The THA must be signed by all employees each day and initialed whenever a changed condition provokes a change in hazard controls.

6.3.1 Hazard Categories

JSAs and THAs should include consideration of the following hazard categories when identifying hazards and task specific controls:

- Energy Sources (line of fire, electricity, pressure, compression/ tension)
- Fall (slip/trip, fall to same level, fall from height)
- Contact with (struck against, struck by, contact with sharp/ abrasives)
- Caught (in, under, between, by)
- Strain/ Overexertion (lifting, repetition, push/pull, bending, twisting)
- Exposure (temperature, radiation, noise, chemicals, radiation, hazardous atmosphere)

6.4 4-SIGHT

When preparing hazard assessments and throughout the day workers should use 4-Sight. This is a mental process through which workers ask themselves (and each other) four questions designed to effectively assess hazards. Using these questions during each task, especially those without formal JSA or THA, will help workers identify hazards and condition changes so that they can control them or stop work to seek assistance.

- 1) What am I about to do?
- 2) What could go wrong?
- 3) What could be done to make it safer?
- 4) What have I done to communicate the hazards?



7.0 PHYSICAL HAZARD ASSESSMENT

7.1 PHYSICAL HAZARDS

A physical hazard is a hazard that threatens the physical safety of an individual; contact with the hazard typically results in an injury. The following table summarizes the physical hazards or activities containing physical hazards present at the site and the associated procedures that address protection and prevention of harm. All checked procedures MUST be included in **Attachment B** for implementation and reference.

Check all applicable hazards/ activities and add site specific description of the hazard.

	Hazard/ Activity (note: text in this column links to procedure)	Site Specific Description	Applicable Procedure
<input type="checkbox"/>	Abrasive Blasting		S3AM-335-PR
<input type="checkbox"/>	Aerial Work Platforms		S3AM-323-PR
<input type="checkbox"/>	All-Terrain Vehicles		S3AM-319-PR
<input type="checkbox"/>	Blasting and Explosives		S3AM-336-PR
<input type="checkbox"/>	Blood borne Pathogens		S3AM-111-PR
<input checked="" type="checkbox"/>	Cofferdams	A cofferdam will likely need to be designed to keep the excavation area dry. Likely sheet piling will be used to dam the upland portion of the ditch. Either a pump and hose will be used to divert any accumulation of water in the damned portion of the stream around the excavation area, or sheet piling will be used along the ditch to divert the water around the excavation. The height of any damned up pool of water will not likely be sufficient to create a deep pool or similar drowning hazard. If a cofferdam is needed, an installation plan will be generated and reviewed with the goal of having the safest possible working conditions. Trained and certified personnel are required for operators installing sheet piling for a cofferdam.	S3AM-344-PR
<input checked="" type="checkbox"/>	Cold Stress	Winter time work	S3AM-112-PR
<input type="checkbox"/>	Compressed Air Systems and Testing		S3AM-337-PR
<input type="checkbox"/>	Compressed Gases		S3AM-114-PR
<input type="checkbox"/>	Concrete Work		S3AM-338-PR
<input type="checkbox"/>	Confined Spaces		S3AM-301-PR
<input type="checkbox"/>	Corrosive Reactive Materials		S3AM-125-PR
<input type="checkbox"/>	Cranes and Lifting Devices		S3AM-310-PR
<input type="checkbox"/>	Demolition		S3AM-339-PR
<input type="checkbox"/>	Diving (scientific and commercial)		S3AM-334-PR
<input checked="" type="checkbox"/>	Drilling, Boring & Direct Push Probing	Removal Action activities	S3AM-321-PR
<input checked="" type="checkbox"/>	Electrical Safety	Removal Action activities	S3AM-302-PR
<input checked="" type="checkbox"/>	Excavation	Removal Action activities. Trained, qualified personnel is required for operators of the excavation equipment.	S3AM-303-PR
<input type="checkbox"/>	Fall Protection		S3AM-304-PR

<input checked="" type="checkbox"/>	Flammable and Combustible Liquids	Removal Action activities	S3AM-126-PR
<input type="checkbox"/>	Gauge Source Radiation		S3AM-122-PR
<input checked="" type="checkbox"/>	Hand and Power Tools	Removal Action activities	S3AM-305-PR
<input checked="" type="checkbox"/>	Hazardous Waste Operations	Removal Action activities	S3AM-117-PR
<input checked="" type="checkbox"/>	Heat Stress	Summer time work	S3AM-113-PR
<input checked="" type="checkbox"/>	Heavy Equipment	Removal Action activities	S3AM-309-PR
<input type="checkbox"/>	High Altitude		S3AM-124-PR
<input type="checkbox"/>	Highway and Road Work		S3AM-306-PR
<input type="checkbox"/>	Hoists Elevators and Conveyors		S3AM-343-PR
<input type="checkbox"/>	Hot Work		S3AM-332-PR
<input checked="" type="checkbox"/>	Ladders	Removal Action activities	S3AM-312-PR
<input type="checkbox"/>	Lockout Tagout		S3AM-325-PR
<input checked="" type="checkbox"/>	Machine Guarding Safe Work Practice	Removal Action activities, on drilling and heavy equipment	S3AM-326-PR
<input type="checkbox"/>	Marine Safety and Vessel Operations		S3AM-333-PR
<input checked="" type="checkbox"/>	Material Storage	Removal Action activities	S3AM-316-PR
<input type="checkbox"/>	Mine Site Activities		S3AM-341-PR
<input type="checkbox"/>	Mining Operations		S3AM-345-PR
<input type="checkbox"/>	Non Ionizing Radiation		S3AM-121-PR
<input checked="" type="checkbox"/>	Overhead Lines	Removal Action activities	S3AM-322-PR
<input type="checkbox"/>	Powder-Actuated Tools		S3AM-327-PR
<input type="checkbox"/>	Powered Industrial Trucks		S3AM-324-PR
<input type="checkbox"/>	Radiation		S3AM-120-PR
<input type="checkbox"/>	Railroad Safety		S3AM-329-PR
<input type="checkbox"/>	Respiratory Protection		S3AM-123-PR
<input type="checkbox"/>	Scaffolding		S3AM-311-PR
<input type="checkbox"/>	Steel Erection		S3AM-340-PR
<input type="checkbox"/>	Temp. Floors, Stairs, Railings, Toe-boards		S3AM-342-PR
<input checked="" type="checkbox"/>	Underground Utilities	Removal Action activities	S3AM-331-PR
<input type="checkbox"/>	Underground Work		S3AM-330-PR
<input checked="" type="checkbox"/>	Wildlife, Plants and Insects	Removal Action activities	S3AM-313-PR
<input checked="" type="checkbox"/>	Working Alone	Removal Action activities, follow-up sampling (if necessary).	S3AM-314-PR
<input checked="" type="checkbox"/>	Working On and Near Water	Removal Action activities, potential for water in ditch.	S3AM-315-PR

In order to more fully address the physical hazards listed above, site-specific field applicable procedures have been developed. They are included in Attachment B of this document.

8.0 CHEMICAL HAZARD ASSESSMENT

AECOM will perform tasks that can expose personnel to a variety of hazards due to the operational activities, physical conditions of the work locations, and potential presence of environmental contaminants. This section presents a variety of potential chemical hazards, exposure pathways, and related mitigation actions. See [S3AM-110-PR](#), Toxic and Hazardous Substances, for information on planning, training, monitoring, and details on several specific chemicals (Benzene, Cadmium, Chromium, Hydrogen Sulfide, Lead, and Silica).

8.1 POTENTIAL CHEMICAL HAZARDS

Summary of Hazardous Properties of Contaminant Exposure Hazards

PEL: Permissible Exposure Limits

TLV: Threshold Limit Values

	Chemical Name	Maximum Concentration found on site	Media	Primary Routes of Exposure	PEL	TLV
<input checked="" type="checkbox"/>	Polychlorinated biphenyls (PCBs)	2500 mg/kg	Soil	Absorption, ingestion	1 mg/m ³ (42% chlorine); 0.5 mg/m ³ (54% chlorine)	1 mg/m ³ (42% chlorine); 0.5 mg/m ³ (54% chlorine)

8.2 POTENTIAL EXPOSURE PATHWAYS

Occupational exposure to chemical hazards associated with the work activities could potentially occur by two primary routes (inhalation and skin contact) and one indirect route (incidental ingestion).

8.2.1 Inhalation

The primary risks associated with AECOM's scope of work pertain to potential exposure to airborne contaminants and explosion hazards. Constituents that potentially pose an occupational concern to employees by the inhalation route are carbon monoxide, hydrogen sulfide, methane, and volatile organic compounds. Air monitoring will be performed within the employee breathing zone to assess the need to implement appropriate control measures or stop work. In addition, air monitoring will be performed at the source to assess potential explosion hazards.

8.2.2 Skin Contact

Personnel handling residual product or waste and associated equipment may be exposed to chemical hazards by skin contact or adsorption. However, exposure is expected to be limited since workers will be required to wear appropriate PPE (i.e. appropriate work gloves, body clothing, and/or face shield).

8.2.3 Ingestion

Personnel handling residual product or waste and associated equipment, including project hazardous materials, may be exposed by incidental ingestion. Typically, this exposure occurs if proper PPE was not used or personal hygiene was not practiced. Personal protection against exposure via ingestion can be accomplished by performance of proper decontamination procedures when exiting contaminated work areas as well as using the correct PPE.

8.3 DECONTAMINATION

All possible and necessary steps shall be taken to reduce or minimize contact with chemicals and contaminated/impacted materials while performing field activities. Decontamination steps are outlined in Hazardous Waste Operations procedure [S3AM-117-PR](#). Some key elements are as follows:

- All persons and equipment entering the EZ shall be considered contaminated, and thus, must be properly decontaminated prior to exiting to clean areas of the site.

- Avoid reactions between the solutions and contaminated materials. Review the applicable SDS.
- All contaminated PPE and decontamination materials shall be contained, stored and disposed of in accordance with site-specific requirements determined by site management.
- Use caution while working around decontamination stations, including the decontamination pad, which may be a slip or trip hazard.
- Use disposable equipment when possible and practical.
- All employees performing equipment decontamination shall wear the appropriate PPE to protect against exposure to contaminated materials. The level of PPE may be equivalent to the level of PPE required in the EZ. Other PPE may include splash protection, such as face-shields and splash suits, and knee protectors.
- All decontaminated equipment shall be visually inspected for contamination prior to leaving the Contaminant Reduction Zone (CRZ).

8.3.1 Contamination Prevention

Good contamination prevention should minimize worker exposure and help ensure valid sample results by precluding cross-contamination. Procedures for contamination prevention for personnel include:

- Minimize walking through areas of obvious or known contamination.
- Minimize handling or touching contaminated materials directly.
- Make sure all PPE is free of cuts or tears prior to donning.
- Particular care should be taken to protect any skin injuries. If open wounds exist on hands or forearms, handling contaminated materials or samples should be restricted or eliminated.
- Stay upwind of airborne contaminants.
- Do not carry cigarettes, gum, chewing tobacco, cosmetics, etc. into potentially contaminated areas.
- Take care to limit the amount of contamination that comes in contact with heavy equipment.
- If contaminated tools are to be placed on non-contaminated equipment for transport, use plastic to keep non-contaminated surfaces clean.

8.3.2 Personnel Decontamination

A personnel decontamination station will be set up outside the WZ. When warranted, personnel exiting the WZ will undergo personnel decontamination. The following three steps will be taken for personnel decontamination.

The decontamination set-up is subject to modification by the SSO.

Step	Personnel Decontamination Procedure
1	Remove loose dirt and mud from hand operated equipment and tools used in the WZ.
2	Brush off boots and any soiled PPE (i.e., gloves) to remove any site soil/sediments. If necessary, rinse off any caked mud.
3	Thoroughly wash prior to eating, drinking, smoking, or using the rest room.

Equipment and supplies needed for the personnel decontamination station include:

- Rinse tubs for cleaning boots and hand tools/equipment, if necessary;
- Long-handled soft bristle scrub brushes for boots and hand tools/equipment; and
- Trash receptacle.

8.3.3 Large Equipment Decontamination

Large equipment decontamination will be set up at the soil and sediment staging CRZ. All equipment and tools will be cleaned prior to site entry to remove grease, oil, dirt, or any other off-site materials. The SM or SSO will make

an inspection of the equipment prior to approving the items for use on-site. The SM or SSO will also be responsible for inspecting large equipment for adequacy of decontamination prior to removal off-site. The inspection will be noted in the SM or SSO's logbook.

The following steps will be taken when decontaminating large equipment:

Step	Large Equipment Decontamination Procedure
1	Drive large equipment such as a backhoe, drill rig, dump truck, from the WZ to the soil and sediment staging CRZ.
2	Use shovels or picks to remove caked soils on equipment.
3	Wash the heavy equipment with the pressurized water spray.
4	If necessary, scrub excessively soiled spots with soapy water, using brushes and a phosphate-free soap.
5	Rinse large equipment with water.
6	Move heavy equipment soil and sediment staging area and allow it to air dry.

Equipment and supplies needed for the large equipment decontamination station include:

- Shovels and picks;
- Pressure washer with water supply;
- Long handled brushes; and
- Phosphate-free soap

8.4 AIR MONITORING

Monitoring shall be performed within the work area on site in order to detect the presence and relative levels of toxic substances. The data collected throughout monitoring shall be used to determine the appropriate levels of PPE. Monitoring shall be in accordance with Exposure Monitoring Procedure S3AM-127-PR and specified in the work permit and/or JSAs for the tasks. Key elements of the procedure include:

- Calibration of monitoring equipment and/or daily bump tests to verify calibrations and confirm alarm function.
- Personal monitoring and result evaluation must be directed by a Certified Industrial Hygienist or Certified Safety Professional.

8.4.1 Real- Time Exposure Measurement/ Equipment

Monitoring shall be performed within the work area on site in order to detect the presence and relative levels of toxic substances. The data collected throughout monitoring shall be used to determine the appropriate levels of PPE. Monitoring shall be conducted as specified in the work permit and JSAs as work is performed. All instrumentation need to be rated intrinsically safe to prevent fire or explosion.

Airborne particulate matter (PM) consists of many different substances suspended in air in the form of particles (solids or liquid droplets) that vary widely in size. Inhalation hazards are caused if the intake of these particles includes intake of vapors or contaminated dust. Particles less than 10 micrometers in diameter (PM-10), which include both respirable fines (less than 2.5 micrometers) and course (less than 10 micrometers) dust particles, pose the greatest potential health concern because they can pass through the nose and throat and get into the lungs.

During the performance of the planned remediation activities, particulate matter in the form of potentially PCB-affected dust may be generated. The greatest potential for the generation of affected dust is during the excavation, stockpiling, and disposal of contaminated soils.

Check which real-time monitoring equipment will be used and update the model type if needed:

	Instrument	Manufacturer/Model	Substances Detected
<input checked="" type="checkbox"/>	Particulate Monitor	MIE Model PDM-3 mini-RAM	<ul style="list-style-type: none"> • Aerosols, mist, dust, and fumes
<input checked="" type="checkbox"/>	Photoionization Detector	Rae Systems Mini-Rae 3000 or equivalent	<ul style="list-style-type: none"> • volatile organic compounds (VOCs)

8.4.2 Health and Safety Action Levels

An action level is a point at which increased protection is required due to the concentration of contaminants in the work area or other environmental conditions. The concentration level (above background level) and the ability of the PPE to protect against that specific contaminant determine each action level. The action levels are based on concentrations in the breathing zone.

If ambient levels are measured which exceed the action levels in areas accessible to unprotected personnel, necessary control measures (barricades, warning signs, and mitigation actions to limit, etc.) must be implemented prior to commencing activities at the specific work area.

Personnel should also be able to upgrade or downgrade their level of protection with the concurrence of Site Supervisor or Site Safety Officer or the Safety Manager.

Reasons to upgrade:

- Known or suspected presence of dermal hazards;
- Occurrence or likely occurrence of gas, vapor, or dust emission; or
- Change in work task that will increase the exposure or potential exposure to hazardous materials.

Reasons to downgrade:

- New information indicating that the situation is less hazardous than was originally suspected;
- Change in site conditions that decrease the potential hazard; or
- Change in work task that will reduce exposure to hazardous materials.

8.4.3 Monitoring Procedures

The monitoring procedures shown below are general guidelines for sampling activities. A reading in excess of action level outlined below will require additional ventilation for 30 minutes, followed by re-monitoring.

Monitoring Procedures and Action Levels

Parameter	Zone Location and Monitoring Interval	Response Level	Response Activity
Dust not otherwise classified (total by aerosol monitor)	Breathing zone every 30 minutes during field activities where exposure to excessive dusts are possible	< 5 mg/m ³	Continue work in Level D and continue monitoring
		> 5mg/m ³	Upgrade to Level C (P100 respirator cartridges), implement dust suppression measures; contact the Site Safety Officer & Site Supervisor.
		> 10 mg/m ³	Cease activities, implement more effective dust suppression measures; contact the Site Safety Officer & Site Supervisor.
Dust not otherwise classified (total by aerosol monitor)	Edge of Exclusion Zone, every 30 minutes during excavation activities	< 5 mg/m ³	Continue work in required PPE, monitor air, and implement engineering controls
		> 5 mg/m ³	Cease activities and contact the Site Safety Officer & Site Supervisor.
VOCs (total)	Breathing Zone continuous during field activities		Continue work in required PPE, monitor air, and implement engineering controls
			Cease activities and contact the Site Safety Officer & Site Supervisor.

9.0 ENVIRONMENTAL IMPACT PREVENTION

AECOM strives to avoid or control environmental impacts from our operations through planning and implementation of best practices as well as preparing responses to react to environmental incidents.

Environmental Compliance procedure [S3AM-204-PR](#) provides details on permitting and planning requirements.

	Potential Environmental Impact	Description of hazard and permit or control being implemented
<input checked="" type="checkbox"/>	Air Emissions	During the excavation, stockpiling and disposal of contaminated soils, there is a potential for particles of contaminated soil to become airborne. The RA Work Plan will outline engineered controls to prevent dust generation from leaving the site.
<input checked="" type="checkbox"/>	Hazardous Waste Management	Depending on the PCB contamination level of soils collected at the site, there is a possibility that the site will be stockpiling and disposing of soils categorized as hazardous material. All contaminated soils excavated will be properly manifested and disposed of according to the AOC and other state and federal laws.
<input checked="" type="checkbox"/>	Storm Water Pollution	Storm water contacting open excavation at the site will have the potential to impact storm water runoff from the site. A Storm Water Pollution Prevention Plan (SWPPP) will be developed in conjunction with the RA Work Plan prior to excavation. The SWPPP will outline the measures that will be taken to prevent storm water pollution from the site.
<input checked="" type="checkbox"/>	Wetlands	A portion of the Western Ditch and Huckleberry park are categorized as a Freshwater Forested/Shrub Wetland by the Fish and Wildlife Service's (FWS) National Wetland Inventory online mapper (https://www.fws.gov/wetlands/Data/mapper.html). See the RA Work Plan mitigation procedures to minimize wetland impacts and revitalize after excavation activities. However, since the project is a CERCLA action, it is exempt from the Clean Water Act regulations enforced by the Army Corps of Engineers.
<input type="checkbox"/>	Critical Habitat	The FWS online critical habitat mapper tool (http://criticalhabitat.fws.gov/) to determine if any plant or animal critical habitats exists on, adjacent to, or may be otherwise impacted by the project. No critical habitat was identified.
<input type="checkbox"/>	Other:	

9.1 INCIDENTAL SPILL PREVENTION AND CONTAINMENT

Spill prevention and containment planning must be conducted and appropriate control measures established, consistent with regulatory requirements. Personnel are not expected to perform a response action related to an uncontrolled release of a hazardous substance. However, in the event of an incidental release of a hazardous material, a response will be performed to absorb, neutralize or otherwise control the release within the immediate work area. Procedures contained in the SDS of the hazardous material will be implemented to perform the response. The Emergency Response section of this HASP contains information on spill reporting, pre- and post-spill evaluation, and response

9.1.1 Spill Prevention and Containment Practices

Work activities may involve the use of hazardous materials (i.e. fuels, solvents) or work involving drums or other containers. When these activities exist the procedures outlined below will be used to prevent or contain spills:

- All hazardous material will be stored in appropriate containers and labelled.
- Tops/lids will be placed back on containers after use.
- Containers of hazardous materials will be stored appropriately away from moving equipment.
- Containers shall only be lifted using equipment specifically manufactured for that purpose.

- Drums/containers will be secured and handled in a manner which minimizes spillage and reduces the risk of musculoskeletal injuries.
- Equipment will be inspected daily for signs of leaks, wear, or strain on parts that, if ruptured or broken, would result in a spill.
- Refueling should occur in designated areas where incidental spills can be prevented from reaching permeable ground surfaces.
- Whenever possible, position parked or stationary equipment over secondary containment and/ or absorbent materials to prevent spills from reaching permeable ground surfaces.
- A spill response kit, to include an appropriate empty container, materials to allow for booming or diking the area to minimize the size of the spill, and appropriate clean-up material (i.e. speedy dri, absorbent pads, etc.) will be available on the project site and positioned for quick and easy access.

10.0 PERSONAL PROTECTIVE EQUIPMENT

PPE is considered the last line of defense in hazard control. PPE is meant to protect workers when all other methods (elimination, engineering, and administrative) have been exhausted. All employees must be trained in the proper use and maintenance of PPE. See Procedure S3AM-208-PR, Personal Protective Equipment.

A PPE assessment (see S3AM-208-FM1) can be performed to help determine PPE requirements. PPE upgrades for individual tasks or steps of a task are to be identified in JSAs or THAs.

Minimum Required PPE (per AECOM PPE and HAZWOPER Procedures):

- Hard hat
- Safety glasses w/ side shields (may be clear or shaded)
- Safety toe work boots
- Long pants and shirts with sleeves (short or long- cover shoulders no tank or muscle shirt styles)

Additional PPE Needed on Site (to encompass all task specific additions and upgrades)

Face/ Eyes <input type="checkbox"/> Spoggles (Safety Glasses with foam liner for dust protection) <input type="checkbox"/> Welding mask/goggles <input type="checkbox"/> Chemical goggles <input type="checkbox"/> Face shield (splash) <input type="checkbox"/> Face shield (impact)	Head/ Ears <input type="checkbox"/> Helmet with chin strap <input type="checkbox"/> Wide brimmed hat <input checked="" type="checkbox"/> Earplugs <input type="checkbox"/> Over-ear hearing protection
Hands <input checked="" type="checkbox"/> Nitrile <input checked="" type="checkbox"/> Leather <input type="checkbox"/> Cut, abrasion and puncture resistant <input type="checkbox"/> Impact-resistant <input type="checkbox"/> Other Chemical Resistant: _____	Legs/ Feet <input type="checkbox"/> High ankle boots <input checked="" type="checkbox"/> Snake guards <input checked="" type="checkbox"/> Rubber boots/waders <input type="checkbox"/> Metatarsal Guards <input type="checkbox"/> Electrically-resistant boots
Body <input checked="" type="checkbox"/> Sunscreen <input checked="" type="checkbox"/> Insect repellent (DEET), seasonal <input type="checkbox"/> Permethrin applied to clothing <input type="checkbox"/> Long-sleeved shirt <input checked="" type="checkbox"/> High-visibility vest <input type="checkbox"/> High-visibility pants <input checked="" type="checkbox"/> Disposable coveralls (as needed) <input type="checkbox"/> Flame retardant clothing <input type="checkbox"/> Fall protection <input type="checkbox"/> Personal floatation device <input type="checkbox"/> Other: _____	Equipment <input type="checkbox"/> Air/noise monitoring equipment (specify): <input type="checkbox"/> Traffic/Work zone control equipment (specify): <input type="checkbox"/> Communication beyond cell phones (specify): <input type="checkbox"/> Fire controls (specify): fire extinguisher

11.0 SITE CONTROL

The purpose of site control is to protect the public from inadvertently coming into contact with site hazards and to protect AECOM employees being impacted by hazards. This section details the equipment and actions needed to promote optimal site control.

11.1 SITE WORK ZONES

Site layout and site control need to be coordinated to achieve a productive work environment and efficient work process while minimizing exposure of employees and the public to hazards associated with the work. Consider the following items when planning the site layout and controls:

- "Line of Fire" hazards- overhead utilities, falling/ tipping equipment, release of energy/ pressure, flying debris,
- Noise, dust, odor suppression
- Contamination containment and decontamination area layout
- Traffic control for site vehicles/ equipment (public traffic control requires Traffic control Plan)
- Restricted access for areas requiring special training, skills, or certifications
- Restriction of work near railroads
- Presence or creation of excavations
- Loading/unloading areas
- Portable restrooms
- Dumpsters and bins
- Equipment lay down
- Heavy equipment parking
- Overnight safety and security needs
-

Check the description of the site controls **already** in place:

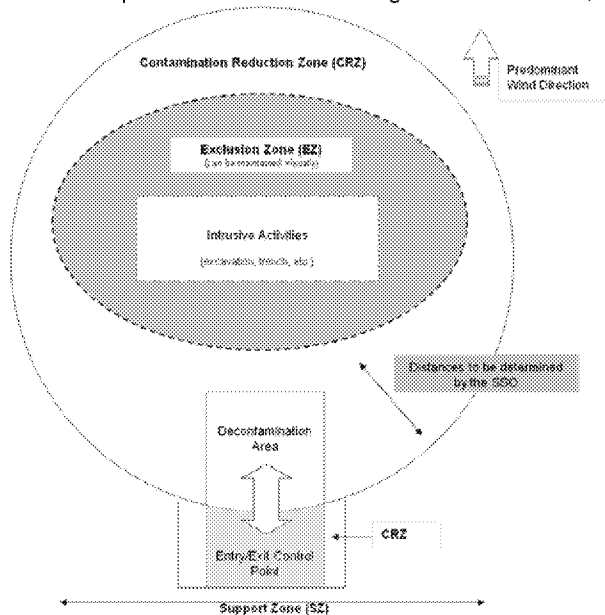
<input type="checkbox"/>	Work area is within a facility/ property with secure and restricted access provided by client or third party
<input checked="" type="checkbox"/>	Work area is enclosed within facility/ property but access is not restricted via locks, guards, or gates
<input checked="" type="checkbox"/>	Work area is on a property that is open and access by the public is likely
<input checked="" type="checkbox"/>	Work area is on a property that is open but access by the public is unlikely
<input type="checkbox"/>	Work area is in a roadway or right of way of a roadway (Traffic Control Plan required <u>S3AM-306-PR</u>)
<input type="checkbox"/>	Work area is on or near railroad (including right of way, active lines, and crossings)
<input type="checkbox"/>	Other (describe):

Check and describe the site controls that need to be added to protect the public and the AECOM work team.

	Control Item	Description of type and application
<input checked="" type="checkbox"/>	Fence	Temporary fencing in certain areas of the site (Huckleberry Park and portions of the Western Ditch) will likely be erected to prevent the public from accessing the excavation areas' contamination reduction zone.
<input checked="" type="checkbox"/>	Locks	Locked gates will be utilized as necessary during the excavation phase to prevent entry by the public to the excavation areas' contamination reduction zone.
<input type="checkbox"/>	Barricades	
<input type="checkbox"/>	Cones	
<input checked="" type="checkbox"/>	Tape	Tape will be used to restrict access to the contamination reduction zones during the pre-excavation soil sampling activities.
<input type="checkbox"/>	Hole Covers	
<input type="checkbox"/>	Other:	

11.2 SITE CONTROL MAP/ DIAGRAM

Figure 2 depicts the site control maps for the Highland Industries facility/western bank and the Huckleberry Park portions of the site, respectively. The areas depicted on Figure 2 are subject to change at the discretion of the SSO and SS as the pre-soil excavation investigation commences, and the RA Work Plan is finalized.



11.3 SIMULTANEOUS AND NEIGHBORING OPERATIONS

Simultaneous and neighboring operations present a need for added coordination and communication to address hazards that are presented by multiple operations. The site is located at the Highland Industries facility. The facility is involved in the manufacture of automotive parts. No facility operations are conducted within the work area. Neighboring properties to site are mostly residential.

11.4 SITE SECURITY

All projects should be reviewed for the potential for personal security issues (e.g., assault, robbery, threat, etc.).

Check all of the following that apply:

- ☐ Project site located in a higher crime area or has a history of security incidents

- ☐ Working outside of regular cellular telephone service
- ☒ Idle property with potential for trespasser(s) to shelter in buildings/structures and assault personnel
- ☐ Working at night

Detail the security measures to address the above risks: The public has been informed of the contamination through public hearings and media outlets. Fencing may will be installed to prevent the public from entering the CRZ during excavation activities. Site Supervisor and/or SSO will meet with first responders and police to discuss work zone locations and emergency action plans and procedures.

11.4.1 Operational Security Plans

All facilities maintained by AECOM must maintain an Operational Security Plan (OSP) describing the conditions of the site or facility, and identifying basic emergency response procedures. This requirement applies to field trailers maintained by AECOM for use on project sites. A blank OSP template is available in Global Resilience Group Standard GRG-001-RP4. The OSP must be maintained by the Project Manager at the field trailer and a copy provided to the Global Resilience Group, which can be found on Ecosystem.

12.0 EMERGENCY RESPONSE

AECOM requires that all projects plan for reasonably foreseeable emergencies (see Emergency Response Planning Procedure S3AM-010-PR). Prior to the start of site operations, all personnel shall review the table below for site-specific information regarding evacuations, muster points, communication, and other site-specific emergency procedures. An Incident Response Flow Chart is included in **Attachment A**.

12.1 INCIDENT/ EMERGENCY CONTACT INFORMATION

AECOM Contacts			
Name	Title	Telephone Number	Mobile Phone
Felix Nchako	Project Manager	678-808-8921	678-209-3607
Brent Jacobs	Site Supervisor		770-630-0913
Ron Hilliard	Site Safety Officer		770-315-9696
Lee Davis	SH&E Manager Southeast Region		205-276-5706
Betsy Stone	Safety Health Environmental Representative		404-831-3664
Tindal Evans	Plant Operations Manager	843-537-8225	843-337-9266
Incident Reporting	DCS Incident Reporting & Help Line	800-348-5046	
AECOM Nurse direct	Use only after incident reporting line	877-878-9525	
Client Contacts			
Cheryl Malloy	Client VP for Environment		336-339-2980
Tindal Evans	Plant Operations Manager	843-537-8225	843-337-9266
Organization/Agency			
Police Department (local)			911 OR 843-537-7868
Fire Department (local)			911 OR 843-537-5941
Ambulance Service (EMT will determine appropriate hospital for treatment) Chesterfield County Ambulance			911 OR 843-623-6838
Hospital: (Site personnel to use for emergency care) Chesterfield General Hospital			843-537-7881
Occupational Clinic: (Site personnel to use for non-emergency care) McLeod Occupational Health Services			843-777-5146
Poison Control Center			(800) 222-1222
Pollution Emergency- National Response Center SC Department of Health and Environmental Control –Emergency Response AECOM Incident Reporting Number			800-424-8802 888-481-0125 800-348-5046
INFOTRAC (AECOM's account number 74984)			800-535-5053
AECOM Hazardous Material Shipping Help Line			800-381-0664
Public Utilities			
Water & Sewer	Town of Cheraw		843-537-7283
Electric	Duke Progress Energy		800-452-2777
Telephone	AT&T		888-757-6500
Natural Gas	SCE&G		800-251-7234
Cable TV	Time Warner		866-892-7201

Call Before You Dig

811, 1-888-721-7877

12.2 MUSTER LOCATION

The muster locations will be at the entry/exits to the site areas as depicted on the site control maps. The SSO/SS will establish with the Highland Industries facility where an appropriate muster location / storm shelter will be in the event of a thunderstorm or tornado threat. The muster location will be marked on Figure 2 and 3.

12.3 COMMUNICATION PROCEDURES

The AECOM work team will directly verbally communicate with each other in the event of an emergency. If direct communication is not available, cell phones will be used to communicate. In the event of an oncoming storm threat, if cell phone communication is not immediately successful, an air horn will be used to signal to the work team to return immediately to the muster location.

In the event of an emergency, the Highland Industries facility's Operations Manager will be contacted via cell phone as soon as possible to alert them of the situation.

12.4 CPR/ FIRST AID TRAINED PERSONNEL

Ron Hilliard, and Charles "Chase" Watson are CPR/First Aid Trained Personnel that will be part of the work team.

12.5 INCIDENT REPORTING

Incidents involving or affecting an AECOM employee or subcontractor will be reported in a prompt manner verbally to the site supervisor and project manager.

1. If the incident is a significant or life-threatening emergency, the employee or supervisor shall immediately dial 911 or the appropriate emergency contact phone number for your site.
2. The employee or supervisor shall contact the Incident Hotline (800-348-5046).
3. The employee or supervisor must notify their operational leaders and the Area SH&E Manager.
4. The supervisor, or delegate, must make initial notification in IndustrySafe within 4 hours for significant incidents, or 24 hours for less significant events event.
5. Client and account management notifications may also apply. The Project Manager will make any necessary notifications.

Any injury, even if no treatment is required, and any incident for which assistance by SH&E Management is needed must be immediately communicated to the Incident Hotline at 1-800-348-5046.

All incidents are also to be reported to IndustrySafe within the timeframes listed below:

Incident Type	IndustrySafe Reporting Time Frame
Significant Incident, including any injury	→ 4 Hours
All Other Incidents	→ 24 Hours

Significant Incident:

- Fatality;
- Amputation;
- Hospitalization for treatment for more than 24 hours (admission);
- Any single event resulting in more than one employee requiring medical treatment or more than one employee being away from work more than 3 days;
- Any SH&E-related Consent Agreement/Order/Lawsuit or enforcement action seeking more than \$10,000 or alleging criminal activity;

- Any spill or release of a hazardous material that is reportable to a regulatory agency;
- Any Notices of Violation resulting from not operating within a regulatory agency permit/license or consent;
- Any incident resulting in property damage expected to exceed \$10,000 United States (US) dollars;
- Any security-related incident that could have caused significant harm to an AECOM employee; and/or
- Any Near Miss event that may have resulted in any of the above consequences but because of "luck" did not result in harm to persons, property or the environment.

All Other Incidents:

- Any injury or illness to an AECOM employee or subcontractor, even if it does not require medical attention, including work-related injuries/illnesses that have become significantly aggravated by the work environment;
- An injury to a member of the public, or clients, occurring on an AECOM-controlled work site;
- Re-occurring conditions such as back pain or cumulative trauma disorders (e.g., carpal tunnel syndrome);
- Fire, explosion, or flash that is not an intended result of a planned event (e.g., remediation process, laboratory Procedure);
- Any incident involving company-owned, rented, or leased vehicles (including personal vehicles used for company business); and/or
- Any failure to comply with the requirements of a regulatory permit issued to AECOM.
- Scan the QR code below to access IndustrySafe reporting system from your smartphone/ device.



12.6 MEDICAL EMERGENCIES

In the event of a life-threatening or critical emergency, AECOM employees should dial 911 and follow the recommended instructions. However, in less serious situations, an injured employee or a co-worker should contact the Incident Hotline at 800-348-5046 to ensure that the employee receives the best care at the best time (i.e., within the first hour following an injury or potential injury). By contacting the Incident Hotline, the worker can be connected with AECOM's nurses for first aid advice. If recommended by the nurse, the supervisor or a co-worker should drive the injured employee to the project-designated clinic or hospital. A map to the designated hospital and clinic is attached as **Attachment A** and the locations and addresses are included in the table above as well as in the HASP Summary on Page i.

12.7 VEHICLE INCIDENTS

All vehicles should be rented through Carson Wagonlit Travel (accessible via Ecosystem) to ensure that AECOM insurance is included in the rental rate. All other insurances should be declined. AECOM's rental vehicle insurance policy for National/Enterprise or Avis can be found on the DCS Americas [United States](#) or [Canada](#) travel pages. **Drivers MUST print and carry the applicable insurance policy for the rental.**

In the event of a vehicle incident (including collisions as well as mechanical difficulties such as breakdowns and flat tires) the following responses are recommended:

- For breakdowns and flat tires, contact an emergency provider

- For rental vehicles, contact the rental company
- To the extent possible, AECOM personnel should not change flat tires or perform similar repairs
- If a collision has occurred, assess the situation and move all occupants (except the injured) out of further harm's way. If safe to do so, remove the car from the traveled way. Call 911 if necessary, and report the incident to the Incident Hotline at 800-348-5046 as soon as practical. If appropriate, wait for police to arrive before moving vehicles. Provide insurance information to other drivers if necessary or requested and collect the same. If possible, obtain names and phone numbers of witnesses. Take photographs of the scene if possible. **DO NOT ADMIT LIABILITY, AGREE TO PAY FOR DAMAGE, OR SIGN A DOCUMENT RELATED TO AN INCIDENT EXCEPT AS REQUIRED BY LAW.**

12.8 SPILL OR RELEASE

AECOM employees are not expected to take action or to participate in rescues or responses to chemical releases (including of petroleum products) beyond the initial discovery of the release and immediate mitigation actions such as closing a valve, placing absorbents, and notifying the client and or public emergency response system (911), unless there is a contractual provision for this response and specially trained employees.

12.8.1 Environmental Spill/Release Reporting

All environmental spills or releases of hazardous materials (e.g., fuels, solvents, etc.), whether in excess of the Reportable Quantity or not, will be reported according to the incident reporting procedure. In determining whether a spill or release must be reported to a regulatory agency, the Site Supervisor or qualified worker will assess the quantity of the spill or release and evaluate the reporting criteria against the state-specific reporting requirements, applicable regulatory permit, and/or client-specific reporting procedures. **If reporting to a US state or Federal regulatory agency is required, AECOM has 15 minutes from the time of the spill/release to officially report it.**

Chemical-specific Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Reportable Quantities for the known chemicals onsite are shown in the table below.

CERCLA Reportable Quantities

Hazardous Substance	Regulatory Synonyms	Final RQ (lbs)
1,1,1-Trichloroethane	TCA	1,000
Arsenic	N/A	1
Benzene	N/A	10
Cadmium	N/A	10
Carbon Tetrachloride	N/A	10
Chromium	N/A	5,000
Ethyl Benzene	N/A	1,000
Lead	N/A	10
Mercury	N/A	1
Methyl Ethyl Ketone	MEK	5,000
Nickel	N/A	100
Pentachlorophenol	PCP	10
Selenium	N/A	100
Tetrachloroethylene	Perchloroethylene, PCE	100
Toluene	N/A	1,000
Trichloroethylene	Trichloroethene, TCE	100
Xylene	N/A	100

CERCLA RQ's can be found at: <http://www.epa.gov/oem/docs/er/302table01.pdf>

The spill containment program addresses the following site-specific information:

- Potential hazardous substance spills and available controls;
- Initial notification and response;
- Spill evaluation and response; and
- Post-spill evaluation.

12.8.2 Spill Evaluation and Response

The SSO is responsible for evaluating spills and determining the appropriate response. When this evaluation is being made, the spill area is isolated and demarcated to the extent possible. When an incidental release occurs, clean-up personnel receive instructions in a pre-clean-up meeting as to spill conditions, PPE, response activities, decontamination, and waste handling.

The procedures of the Emergency Response section of this HASP are immediately implemented when the spill is determined to require emergency precautions and action. If necessary to protect those outside the clean-up area, notification of the appropriate authorities is made. **Table 10-2** lists the spill conditions that trigger notification of Federal, state, and local agencies.

The following are general measures that response/clean-up personnel take when responding to a spill:

- To minimize the potential for a hazardous spill, hazardous substances, control/absorbent media, drums and containers, and other contaminated materials are properly stored and labeled;
- When a spill occurs, only those persons involved in overseeing or performing spill containment operations will be allowed within the designated hazard areas. If necessary, the area will be roped or otherwise blocked off. Unauthorized personnel are kept clear of the spill area;
- Appropriate PPE is donned before entering the spill area;
- Appropriate spill control measures are applied during spill response;
- Whenever possible without endangerment of personnel, the spill is stopped at the source or as close to the source as possible;
- Ignition points are removed if fire or explosion hazards exist;
- Surrounding reactive materials are removed;
- Drains or drainage in the spill area are blocked or surrounded by berms to exclude the spilled waste and any materials applied to it;
- Provisions are made to contain and recover a neutralizing solution, if used;
- Small spills or leaks from a drum, tank, or pipe will require evacuation of at least Enter Distance feet in all directions to allow clean-up and to prevent employee exposure. For small spills, sorbent materials such as sand, sawdust, or commercial sorbents (see Table 10-1 above for site-specific sorbent media) are placed directly on the spill to prevent further spreading and aid in recovery;
- Spill area is sprayed with appropriate foam where the possibility of volatile emissions exists;
- If the spill results in the formation of a toxic vapor cloud, from vaporization, reaction with surrounding materials, or the outbreak of fire, further evacuation may be required;
- To dispose of spill waste, all contaminated sorbents, liquid waste, or other spill clean-up will be placed in small quantities Enter QTY pounds) in approved drums for proper storage or disposal as hazardous waste; and

12.8.3 Post Spill Evaluation

As part of the incident investigation and reporting documentation, a written spill response report shall be prepared at the conclusion of clean-up operations. The report will include, at a minimum, the following information:

- Date of spill incident;
- Cause of incident;
- Spill response actions;
- Any outside agencies involved, including their incident reports; and

- Lessons learned or suggested improvements.

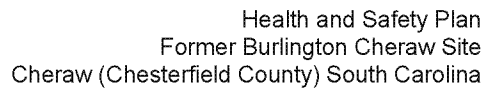
The spill area is inspected to ensure the area has been satisfactorily cleaned. The use of surface and air sampling is utilized in this determination as necessary. The root cause of the spill is examined and corrective steps taken to ensure the engineering and control measures in place have performed as required. If alternative precautions or measures are needed, they are made available and implemented.

All durable equipment placed into use during clean-up activities is decontaminated for future utilization. All spill response equipment and supplies are re-stocked as required.

12.9 FIRE

AECOM employees are not expected to attempt to put out fires. Stop work; notify all AECOM personnel, move upwind and contact 911 and/or emergency response at the site. If employees have been properly trained in the operation of a fire extinguisher, they may attempt to put out a small fire, provided that the following conditions are met:

- The fire must be small (i.e., smaller than a trash can) and in its early stages
- The employee must have an escape route
- The employee must be trained and know they have the right type of extinguisher
- The employee must be safe from toxic gases
- There must be no hazardous conditions that could quickly accelerate the fire (i.e., presence of chemicals, especially dry grass, etc.)
- Above all, if in doubt, the employee must not attempt to fight the fire



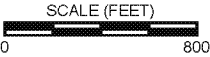
By signing below, the undersigned acknowledges that he/she has reviewed the AECOM Health and Safety Plan for the Former Burlington Industries Cheraw Site. The undersigned also acknowledges that he/she has been instructed in the contents of this document and understands the information pertaining to the specified work, and will comply with the provisions contained therein. The employee understands that they are NOT to perform any work that they have not been adequately trained for and that they are to stop work if it is unsafe to proceed. Finally, the employee understands to notify the Site Supervisor and the Incident Hotline at 800-348-5046 for any incident, ***including ANY injury even if no first aid or medical treatment is required.***

[illegible]

Figures



- Legend**
- Former Burlington Industries Facility
 - Western Ditch
 - Huckleberry Park
 - Streams

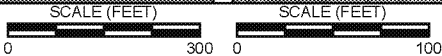


CONFIDENTIAL - ALL RIGHTS RESERVED - PROPERTY OF AECOM AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.			FIGURE 1	
SITE AND VICINITY MAP				
DRAWN BY: Lance Greene	REVIEWED BY: JPV	APPROVED BY: JPV	DATE 11/17/2017	PROJECT NO.: 60559020
TK HOLDINGS, INC. FORMER BURLINGTON INDUSTRIES SITE 650 CHESTERFIELD HWY, CHERAW, SC 29520				



Legend

- CRZ
- Decontamination Area/Entry and Exit/Disposal Truck Loading
- EZ
- Excavation (TBD)
- Stockpile Location (TBD)
- Streams



CONFIDENTIAL - ALL RIGHTS RESERVED - PROPERTY OF AECOM AECOM TECHNICAL SERVICES OF NORTH CAROLINA, INC.			FIGURE 2	
SITE CONTROL MAP				
DRAWN BY: Lance.Greene	REVIEWED BY: JPV	APPROVED BY: JPV	DATE 11/17/2017	PROJECT NO: -
TK HOLDINGS, INC. FORMER BURLINGTON INDUSTRIES SITE 650 CHESTERFIELD HWY, CHERAW, SC 29520				

Attachment A

Hospital and Clinic Directions/ Maps

Incident Reporting and Response
Flow Chart

Google Maps

Highland Industries to McLeod Health Cheraw
Hospital

Walk 0.3 mile, 7 min



Map data ©2017 Google 100 ft

Use caution - may involve errors or sections not suited for walking

0.3 mi

Google Maps

Highland Industries to 149 N Ravenel St, Florence, SC 29506

Drive 40.7 miles, 54 min

Occupational Clinic



Map data ©2017 Google 5 mi

Highland Industries to 149 N Ravenel St, Florence, SC 29506

Drive 40.7 miles, 54 min

Map data ©2017 Google

2 min (1.2 mi)

↑ 0.2 mi

Continue to follow Covington Rd

0.9 mi

354 ft

2 min (1.3 mi)

28 min (24.4 mi)

0.9 mi

11.2 mi



Hospital- Address, written directions, and mapped route from site

The nearest hospital is McLeod Health Cheraw, and is located across Chesterfield Hwy from the Highland Industries facility.



Adobe Acrobat
Document

Occupational Clinic- Address, written directions, and mapped route from site

Most direct route:

US-52 South ~39 miles

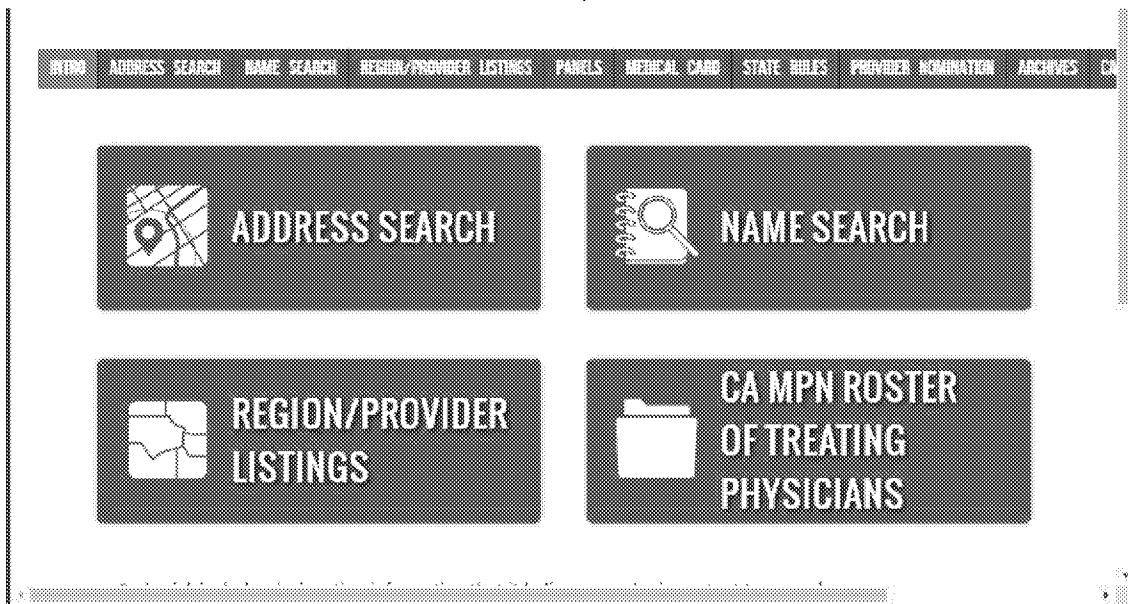
In Florence, US-52 merges with W. Lucas St. Stay on West Lucas St. until you see the McCleod Occupational Health facility.



Adobe Acrobat
Document

Preparer of HASPs can locate the nearest hospital and non-emergency clinics that take AECOM workers' compensation by using the following resource. Insert maps to the clinic and hospital in this attachment and include name, phone number, and address in the Summary section. Note: If the distance to the provider is unreasonable (i.e., greater than [>] 30 minutes for a hospital or 1 hour for a clinic), also include directions to a closer clinic or hospital.

- Go to <https://viaoneprovidersearch.net>
- User name: Sedgwick2300
- Password: 2300
- Select one of the buttons:
 - Address Search for nearest to a specific site,



- Name search to verify a previously-selected clinic/hospital is in the network, or
- Region search best for projects with multiple sites in a geographical area],
- On the following screen, to search for Hospitals with emergency room care, select "Hospitals" and "Hospital: Acute Care".

Select Provider Type/Specialty

Search Key:

Provider Types:

Hospitals
Initial Care/Urgent Care
Primary Care Providers
Physical Medicine & Therapy
Orthopedics
Radiology
Surgery

Specialties:

Industrial Clinic
Occupational Medicine Clinic
Occupational Medicine
Urgent Care Clinic
Walk-In Clinic

Hold the CTRL key down to select multiple elements with the mouse.

Find Providers **Display Provider Count**

- To search for Hospitals with emergency room care, select "Hospitals" and "Hospital: Acute Care".

Select Provider Type/Specialty

Search Key:

Provider Types:

Hospitals
Initial Care/Urgent Care
Primary Care Providers
Physical Medicine & Therapy
Orthopedics
Radiology
Surgery

Specialties:

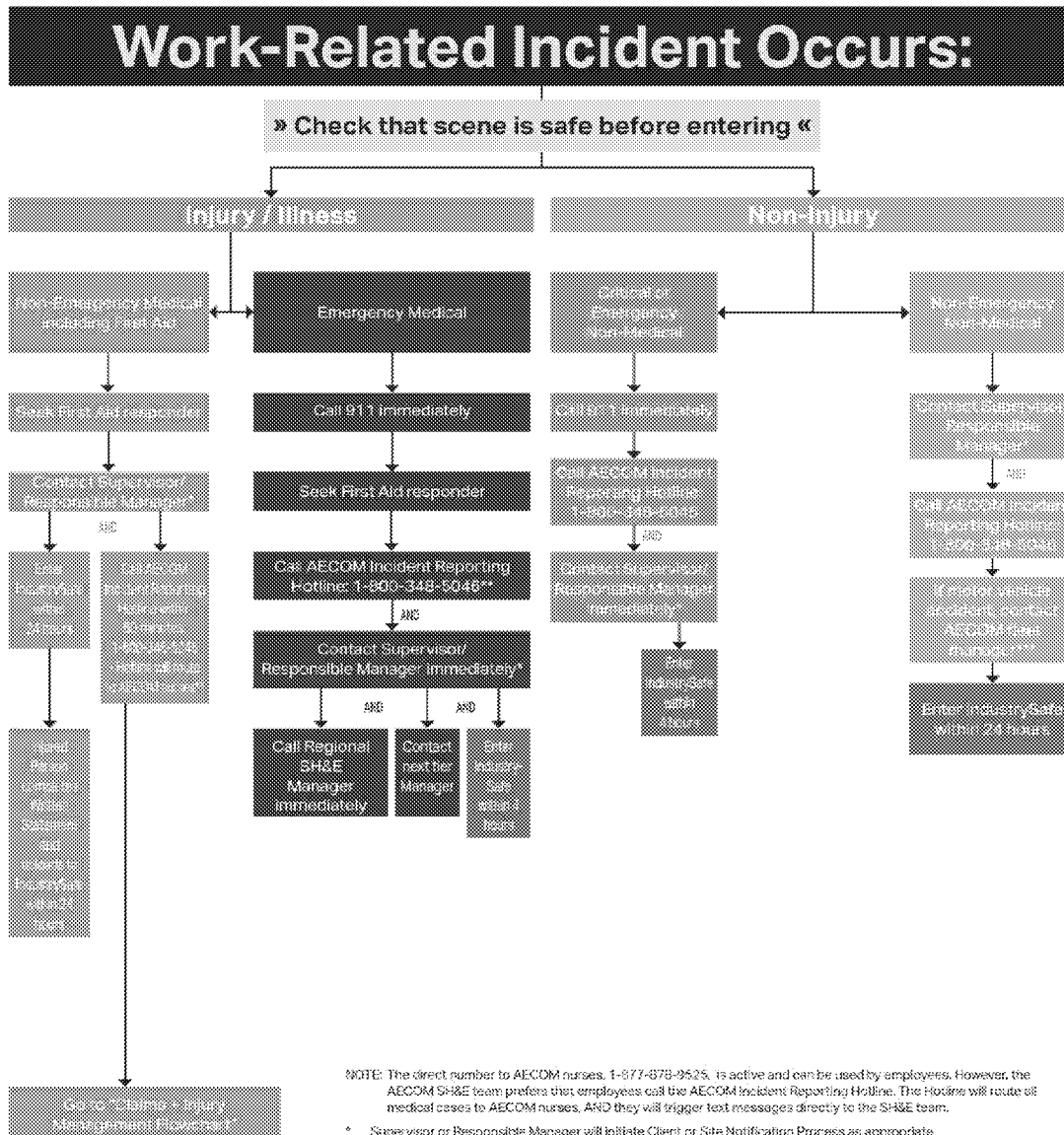
Hospital: Acute Care
Hospital: Long Term
Hospital: Pediatric
Hospital: Psychiatric/Chemical Dependency
Hospital: Psychiatric
Hospital: Rehabilitation
Hospital: Specialty

Hold the CTRL key down to select multiple elements with the mouse.

Find Providers **Display Provider Count**

Work-Related Incident Flowchart For Employees | Translated October 2016

DCS - Americas



Updated October 2016

Attachment B

AECOM SH&E Field Applicable Procedures

All AECOM SH&E Procedures, in their controlled copy version, are available on the [internal SH&E Policy and Procedures ecosystem page](#).

Programmatic procedures referenced in this document (for example SH&E Training) **DO NOT** need to be printed for inclusion in this HASP. Only procedures that are needed for field activity reference and application **MUST** be printed in full and included in this section.

In addition, site specific procedures have been developed and are included below.

Copy the Field Procedure Checklist from the Physical Hazards section 7.1 to become your table of contents for these attachments. Include only those procedures checked as applicable to this project.

Table of Contents

Cold Stress	Winter time work	S3AM-112-PR
Coffer Dam	Excavation work phase	S3AM-344-PR
Drilling, Boring & Direct Push Probing	Pre-Soil Excavation Investigation	S3AM-321-PR
Electrical Safety	Pre-Soil Excavation Investigation and Excavation work phases	S3AM-302-PR
Excavation	Excavation work phase	S3AM-303-PR
Flammable and Combustible Liquids	Excavation work phase	S3AM-126-PR
Hand and Power Tools	Pre-Soil Excavation Investigation and Excavation work phases	S3AM-305-PR
Hazardous Waste Operations		S3AM-117-PR
Heat Stress	Summer time work	S3AM-113-PR
Heavy Equipment	Excavation work phase	S3AM-309-PR
Ladders	Pre-Soil Excavation Investigation and Excavation work phases	S3AM-312-PR
Material Storage	Excavation/Stockpiling work phase	S3AM-316-PR
Overhead Lines	Pre-Soil Excavation Investigation and Excavation work phases	S3AM-322-PR
Underground Utilities	Pre-Soil Excavation Investigation and Excavation work phases	S3AM-331-PR
Wildlife, Plants and Insects	Work in ditch and tall grass	S3AM-313-PR
Working Alone	Follow-up to the Pre-Soil Excavation Investigation phase (if necessary).	S3AM-314-PR
Working On and Near Water	Potential for water in ditch.	S3AM-315-PR

Attachment C

Safety Data Sheets (SDSs)

Attachment D

Site Orientation

AECOM will conduct a site safety briefing for a person's initial visit to the site. The briefing will be conducted:

- Prior to the start of work;
- For any new AECOM or subconsultant personnel; and
- At each mobilization, or whenever there is a change in task or significant change in task location.

All personnel working on the project who have received the site briefing (including the HASP review) will sign the Personal Acknowledgement located at the end of the HASP. Visitors may receive a shortened version to address the hazards specific to their visit.

The following items, at minimum, will be discussed during the site safety briefing:

- Contents of this HASP;
- The Emergency Response Plan;
- Contractor SH&E Management expectations;
- Injury management, including notification and hospital and occupational clinic locations;
- The AECOM 4-Sight program;
- Stop Work authority;
- The JSAs (Attachment E) for the tasks that will be performed on a given job;
- Completion of a THA each day (Attachment E);
- Types of hazards at the site and means for minimizing exposure to them;
- Instructions for new operations to be conducted, and safe work practices;
- PPE that must be used;
- Lone worker check-in procedures;
- Emergency evacuation routes, muster points, and tornado/storm shelters; and
- Location and use of emergency equipment.

These meetings must be documented and maintained in the project files.

Attachment E

Project/Task-Specific Pre-Job Hazard Assessments or Job Safety Analysis

The preparer shall download and prepare one Pre-Job Hazard Assessment for each discrete task being performed during the project (I.e. Driving, Inspection, Sample Collection, etc.). Checklist **S3AM-209-FM4*** shall be used. The AECOM electronic job safety analysis (eJSA) toolbox* may also be used to find previously approved job safety analyses (JSAs).

Site-specific tasks have been identified and Recommended Controls and Required Safety Procedures have been outlined.

Insert list of Pre-Job Hazard Assessments or Job Safety Analysis here. Include after this cover sheet in the final HASP.

Blank Daily THA and Daily Tailgate Forms

The preparer shall download a sufficient number of copies of the daily Task Hazard Analysis and Tailgate Meeting form* (**DCS SH&E ecosystem page**) and insert after this cover sheet in the final HASP. One copy of the THA/Tailgate MUST be prepared at the start of each shift, and signed by all staff involved in the operation. The THA should be consulted and updated throughout the day if conditions change.

*Client required equivalents may be substituted

Americas

Pre-Job Hazard Assessment

S3AM-209-FM4

Location: Former Burlington Industries Cheraw Site

Date: November, 13, 2017

Prepared By: John-Paul Vigil

Approved By: [Click here to enter text.](#)

Principal Activities	Potential Safety/Health Hazards	Initial Risk Rating	Control Measures	Final Risk Rating
List principal activities involved in the scope of work	Identify each safety or health hazard		Identify engineering and administrative controls and any specific PPE that is required	
ACTIVITY 1 – Mobilization and Site Controls Set-up	<ol style="list-style-type: none"> Slips, Trips, Falls Noise Heat stress/cold stress Insect stings/bites Strains/sprains Fire Inclement weather Contact w/ existing utilities Electrocution Struck by or against Crush/pinch hazards Cuts/Lacerations/ Abrasions Thermal burns Vehicle collision Contact with poisonous plants 	<ol style="list-style-type: none"> 6 6 6 6 8 8 8 8 6 6 6 6 5 6 5 	<ol style="list-style-type: none"> Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u>. Complete the housekeeping inspection form (<u>S3AM-013-FM1</u>) following establishment of site trailers. Establish and maintain proper storage of materials. Implement hearing protocols as outlined in <u>S3AM-118-PR1</u>. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. Assess site potential for contact with ticks and other insects. Conduct self inspections or use insect repellents, as needed. Avoid/drain stagnate water areas. Refer to <u>S3AM-313-PR</u> for prevention and contact instructions. Employ proper lifting techniques for manual lifts as identified in <u>S3AM-014-PR1</u>. Avoid uneven ground and/or working/walking surfaces. Stage and store flammables as outlined in <u>S3AM-126-PR1</u>. Complete <u>S3AM-126-FM1</u> as specified. No smoking during refueling operations or within the CRZ. Suspend outdoor work during thunderstorms, heavy rain, snow, ice. Identify overhead and underground utilities prior to receiving and operating equipment. Observe other provisions stated in <u>S3AM-322-PR1</u> and <u>S3AM-331-PR1</u>. Use prevention measures outlined in <u>S3AM-302-PR1</u> for electrical safety. Complete <u>S3AM-302-F</u> as required. Establish and demarcate operational zones for equipment. Secure visual contact w/ operator prior to approaching equipment. Site staff working around operating equipment shall wear high-visibility vest. Keep unauthorized personnel away from the work area and maintain a secure work site perimeter. Implement provisions for vehicle safety as outlined in <u>S3AM-320-PR1</u>. Set site speed limit 10 mph. Keep hands and fingers away from close tolerance locations. Use leather work gloves when laboring at all times. Keep hands away from mufflers or engines of grubbing equipment. Establish and maintain employee parking and equipment drop zones. Identify and avoid areas where poisonous vegetation exists. Use light disposable coveralls and gloves and handle used PPE the same. 	<ol style="list-style-type: none"> 3 3 3 3 4 4 4 4 3 3 3 3 3 3 2
ACTIVITY 2 – Upgrade Existing Site Access Roads	<ol style="list-style-type: none"> Slips, Trips, Falls Noise Heat stress/cold stress Insect stings/bites Strains/sprains Fire Inclement weather 	<ol style="list-style-type: none"> 6 6 6 6 8 8 10 	<ol style="list-style-type: none"> Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u>. Establish and maintain proper storage of materials. Implement hearing protocols as outlined in <u>S3AM-118-PR1</u>. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. Assess site potential for contact with ticks and other insects. Conduct self inspections or use insect repellents, as needed. Avoid/drain stagnate water areas. Refer to <u>S3AM-313-PR</u> for prevention and contact instructions. 	<ol style="list-style-type: none"> 3 3 3 3 3 3 3

Principal Activities	Potential Safety/Health Hazards	Initial Risk Rating	Control Measures	Final Risk Rating
	8. Contact w/ existing utilities 9. Struck by or against 10. Crush/pinch hazards 11. Cuts/lacerations; puncture wounds 12. Vehicle collision 13. Contact with site contaminants	8. 10 9. 6 10. 6 11. 6 12. 6 13. 5	5. Employ proper lifting techniques for manual lifts as identified in <u>S3AM-014-PR1</u> . Avoid uneven ground and/or working/walking surfaces. 6. No smoking during refueling operations. 7. Suspend outdoor work during thunderstorms, heavy rain, snow, ice. 8. Identify overhead and underground utilities prior to receiving and operating equipment. Observe other provisions stated in <u>S3AM-322-PR1</u> and <u>S3AM-331-PR1</u> . 9. Establish and demarcate operational zones for equipment. Secure visual contact w/ operator prior to approaching equipment. Site staff working around operating equipment shall wear high-visibility vest. Keep unauthorized personnel away from the work area and maintain a secure work site perimeter. Implement provisions for vehicle safety as outlined in <u>S3AM-320-PR1</u> . Set site speed limit 10 mph. 10. Keep hands and fingers away from close tolerance locations. 11. Use leather work gloves when laboring at all times. Inspect walking areas for foot puncture hazards. 12. Establish and maintain equipment operating zones. 13. Perform air monitoring for site contaminants. Wear Level D PPE, at a minimum. Upgrade to Level C as required by air monitoring.	8. 4 9. 3 10. 3 11. 2 12. 2 13. 2
ACTIVITY 3 – Clearing and Grubbing	1. Slips, Trips, Falls 2. Noise 3. Heat stress/cold stress 4. Insect stings/bites 5. Strains/sprains 6. Fire 7. Inclement weather 8. Contact w/ existing utilities 9. Electrocution 10. Struck by or against 11. Crush/pinch hazards 12. Cuts/Lacerations and Puncture wounds 13. Thermal burns 14. Vehicle collision 15. Contact with poisonous plants	1. 6 2. 6 3. 6 4. 8 5. 8 6. 8 7. 10 8. 10 9. 6 10. 6 11. 6 12. 6 13. 5 14. 6 15. 5	1. Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u> . Establish and maintain proper storage of materials. 2. Implement hearing protocols as outlined in <u>S3AM-118-PR1</u> . 3. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. 4. Assess site potential for contact with ticks and other insects. Conduct self-inspections or use insect repellents, as needed. Avoid/drain stagnate water areas. Refer to <u>S3AM-313-PR</u> for prevention and contact instructions. 5. Employ proper lifting techniques for manual lifts as identified in <u>S3AM-014-PR1</u> . Avoid uneven ground and/or working/walking surfaces. 6. Stage and store flammables as outlined in <u>S3AM-126-PR1</u> . Complete S3AM-126-FM1 as specified. No smoking during refueling operations or within the CRZ. 7. Suspend outdoor work during thunderstorms, heavy rain, snow, ice. 8. Identify overhead and underground utilities prior to receiving and operating equipment. Observe other provisions stated in <u>S3AM-322-PR1</u> and <u>S3AM-331-PR1</u> . 9. Use prevention measures outlined in <u>S3AM-302-PR1</u> for electrical safety. Complete S3AM-302-F as required. 10. Establish and demarcate operational zones for equipment. Secure visual contact w/ operator prior to approaching equipment. Site staff working around operating equipment shall wear high-visibility vest. Keep unauthorized personnel away from the work area and maintain a secure work site perimeter. Implement provisions for vehicle safety as outlined in <u>S3AM-320-PR1</u> . Set site speed limit 10 mph. 11. Keep hands and fingers away from close tolerance locations. 12. Use leather work gloves when laboring at all times. 13. Keep hands away from mufflers or engines of grubbing equipment. 14. Establish and maintain employee parking and equipment drop zones. 15. Identify and avoid areas where poisonous vegetation exists. Use light disposable coveralls and gloves and handle used PPE the same.	1. 3 2. 3 3. 3 4. 3 5. 3 6. 3 7. 4 8. 3 9. 3 10. 2 11. 2 12. 2 13. 2 14. 2 15. 2

Principal Activities	Potential Safety/Health Hazards	Initial Risk Rating	Control Measures	Final Risk Rating
ACTIVITY 4 – Soil and Sediments Sampling	<ol style="list-style-type: none"> Contact with utilities Hazardous atmosphere Struck by or against Noise Slip, trip and falls Sprains/strains Fire Pinch/crush points Thermal burns Heat stress/cold stress Inclement weather 	<ol style="list-style-type: none"> 10 6 6 6 6 6 8 8 8 10 5 6 10 	<ol style="list-style-type: none"> Utilities shall be located, identified and demarcated as per <u>S3AM-331-PR1</u>. Provide monitoring of atmosphere during removal of soils using dust monitors. Adjust respiratory PPE in accordance with SSP action levels. Personnel shall remain clear of equipment swing radius at all times. Keep idle equipment in staging area. Equipment shall have required warning alarms. Establish safe operating area. Personnel shall use hearing protection when equipment is operating. Housekeeping will be in accordance with provisions stated in <u>S3AM-013-PR</u>. Clean fill and excavated soils will be staged in designated locations. Demarcate excavation zones. Review <u>S3AM-014-PR1</u> for proper lifting techniques. Observe terrain when walking. Heavy equipment shall be equipped with a portable fire extinguisher per <u>S3AM-309-PR1</u>. Keep fire extinguisher within 25 feet of refueling operations. Equipment shall be shut down prior to refueling. Personnel will keep hands and feet clear from operating equipment and fingers clear from close tolerance locations. Keep personnel and PPE a safe distance from equipment exhaust systems. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. Suspend outdoor work during thunderstorms, heavy rain, snow, or ice. 	<ol style="list-style-type: none"> 3 3 3 2 2 2 3 2 2 3 2 3 3
ACTIVITY 5 – Site Surveying	<ol style="list-style-type: none"> Slips, Trips, Falls Heat/cold stress Strains/sprains Inclement weather Exposure to site contaminants; contact with contaminated materials Insect bites/stings Contact with poisonous plants 	<ol style="list-style-type: none"> 6 6 8 10 5 6 5 	<ol style="list-style-type: none"> Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u>. Complete the housekeeping inspection form (<u>S3AM-013-FM1</u>) following establishment of site trailers. Establish and maintain proper storage of materials. Implement hearing protocols as outlined in <u>S3AM-118-PR1</u>. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. Assess site potential for contact with ticks and other insects. Conduct self inspections or use insect repellents, as needed. Avoid/drain stagnate water areas. Refer to <u>S3AM-313-PR</u> for prevention and contact instructions. Employ proper lifting techniques for manual lifts as identified in <u>S3AM-014-PR1</u>. Avoid uneven ground and/or working/walking surfaces. Suspend outdoor work during thunderstorms, heavy rain, snow, ice. 	<ol style="list-style-type: none"> 2 2 2 3 1 3 3
ACTIVITY 6 – Excavation and Stockpiling of Contaminated soil and Sediments	<ol style="list-style-type: none"> Contact with utilities Hazardous atmosphere Struck by or against Noise Slip, trip and falls Sprains/strains Fire Pinch/crush points Thermal burns Heat stress/cold stress Inclement weather 	<ol style="list-style-type: none"> 10 6 6 6 10 10 8 5 10 10 5 6 10 	<ol style="list-style-type: none"> Utilities shall be located, identified and demarcated as per <u>S3AM-331-PR1</u>. Provide monitoring of atmosphere during removal of soils using dust monitors. Adjust respiratory PPE in accordance with SSP action levels. Personnel shall remain clear of equipment swing radius at all times. Keep idle equipment in staging area. Equipment shall have required warning alarms. Establish safe operating area. Only qualified persons will operate the heavy equipment. Personnel shall use hearing protection when equipment is operating. Housekeeping will be in accordance with provisions stated in <u>S3AM-013-PR</u>. Clean fill and excavated soils will be staged in designated locations. Demarcate excavation zones. If the excavation is held open overnight, establish barriers at least 6 ft from the excavation with signage warning of "Danger, Open Excavation". No one shall enter the excavation zone without Review <u>S3AM-014-PR1</u> for proper lifting techniques. Observe terrain when walking. Heavy equipment shall be equipped with a portable fire extinguisher per <u>S3AM-309-PR1</u>. Keep fire extinguisher within 25 feet of refueling operations. Equipment shall be shut down prior to refueling. 	<ol style="list-style-type: none"> 3 3 3 2 2 2 3 2 2 2 2 3 3

Principal Activities	Potential Safety/Health Hazards	Initial Risk Rating	Control Measures	Final Risk Rating
			8. Personnel will keep hands and feet clear from operating equipment and fingers clear from close tolerance locations. 9. Keep personnel and PPE a safe distance from equipment exhaust systems. 10. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. 11. Suspend outdoor work during thunderstorms, heavy rain, snow, or ice.	
ACTIVITY 7 – Confirmation Soil and Sediments Sampling	1. Slip, trip, falls 2. Heat stress/cold stress 3. Insect stings/bites 4. Inclement weather 5. Contact with poisonous plants	1. 10 2. 6 3. 6 4. 10 5. 5	1. Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u> . Establish and maintain proper storage of materials. Do not enter an open excavation deeper than 4 ft. Take samples from the bucket of the excavator or stockpiled soil if deeper than 4 ft. 2. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. 3. Suspend outdoor work during thunderstorms, heavy rain, snow, or ice. 4. Identify and avoid areas where poisonous vegetation exists. Use light disposable coveralls and gloves and handle used PPE the same. 5. Assess site potential for contact with ticks and other insects. Conduct self-inspections or use insect repellents, as needed. Avoid/drain stagnate water areas. Refer to <u>S3AM-313-PR</u> for prevention and contact instructions.	1. 2 2. 2 3. 2 4. 3 5. 2
ACTIVITY 8 – Characterization of Stockpiled Soil and Sediments	1. Slip, trip, falls 2. Heat stress/cold stress 3. Insect stings/bites 4. Inclement weather 5. Contact with poisonous plants	1. 6 2. 6 3. 6 4. 10 5. 5	1. Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u> . Establish and maintain proper storage of materials. 2. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. 3. Suspend outdoor work during thunderstorms, heavy rain, snow, or ice. 4. Identify and avoid areas where poisonous vegetation exists. Use light disposable coveralls and gloves and handle used PPE the same. 5. Assess site potential for contact with ticks and other insects. Conduct self-inspections or use insect repellents, as needed. Avoid/drain stagnate water areas. Refer to <u>S3AM-313-PR</u> for prevention and contact instructions.	1. 2 2. 2 3. 2 4. 3 5. 2
ACTIVITY 9 – Disposal of Excavated Soil and Sediments in Off-site Permitted Subtitle D Land fill	1. Slips, trips, falls 2. Use of heavy equipment 3. Noise 4. Crush/pinch hazards 5. Cuts/lacerations 6. Heat/cold stress 7. Strains/sprains 8. Inclement weather 9. Struck by or against 10. Vehicle collision 11. Fire	1. 6 2. 10 3. 6 4. 8 5. 6 6. 8 7. 6 8. 10 9. 10 10. 6 11. 8	1. Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u> . Establish and maintain proper storage of materials. 2. Implement hearing protocols as outlined in <u>S3AM-118-PR1</u> . 3. Do not remove machine/tool guards. Post hazard-warning signs. Keep clear of moving equipment and fingers clear of close tolerance areas. Keep body, hands and fingers from under suspended loads 4. Use hand protection when handling materials. Use appropriate tools for task at hand. 5. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. 6. Suspend outdoor work during thunderstorms, heavy rain/snow or ice.	1. 2 2. 3 3. 2 4. 3 5. 2 6. 2 7. 2 8. 3 9. 3 10. 3 11. 2
ACTIVITY 10 – Demobilization	1. Slips, Trips, Falls 2. Noise 3. Heat stress/cold stress 4. Insect stings/bites 5. Strains/sprains 6. Fire	1. 6 2. 6 3. 6 4. 6	1. Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u> . Establish and maintain proper storage of materials. 2. Implement hearing protocols as outlined in <u>S3AM-118-PR1</u> . 3. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable.	1. 2 2. 2 3. 2 4. 2

Principal Activities	Potential Safety/Health Hazards	Initial Risk Rating	Control Measures	Final Risk Rating
	7. Inclement weather 8. Contact w/ existing utilities 9. Electrocution 10. Struck by or against 11. Crush/pinch hazards 12. Cuts/Lacerations 13. Vehicle collision	5. 8 6. 8 7. 10 8. 10 9. 6 10. 8 11. 8 12. 6 13. 6	4. Perform frequent daily self-inspection for ticks. Use insect repellents. Avoid dawn and dusk outdoor work and stagnate water areas. Refer to <u>S3AM-313-PR</u> for prevention and contact instructions. 5. Employ proper lifting techniques for manual lifts as identified in <u>S3AM-014-PR1</u> . Avoid uneven ground and/or working/walking surfaces. 6. Stage and store flammables as outlined in <u>S3AM-126-PR1</u> . Complete <u>S3AM-126-FM1</u> as specified. No smoking during refueling operations or within the CRZ. 7. Suspend outdoor work during thunderstorms, heavy rain, snow, ice. 8. Identify overhead and underground utilities prior to receiving and operating equipment. Observe other provisions stated in <u>S3AM-322-PR1</u> and <u>S3AM-331-PR1</u> . 9. Use prevention measures outlined in <u>S3AM-302-PR1</u> for electrical safety. Complete <u>S3AM-302-F</u> as required. 10. Establish and demarcate operational zones for equipment. Secure visual contact w/ operator prior to approaching equipment. Site staff working around operating equipment shall wear high-visibility vest. Keep unauthorized personnel away from the work area and maintain a secure work site perimeter. Implement provisions for vehicle safety as outlined in <u>S3AM-320-PR1</u> . Set site speed limit 10 mph. 11. Keep hands and fingers away from close tolerance locations. 12. Use leather work gloves when laboring at all times. 13. Keep hands away from mufflers or engines of grubbing equipment. 14. Establish and maintain employee parking and equipment drop zones.	5. 2 6. 2 7. 3 8. 3 9. 3 10. 2 11. 2 12. 2 13. 2
ACTIVITY 11 – Post-construction Toxicity Testing of Sediments, and soil.	1. Slips, Trips, Falls 2. Heat stress/cold stress 3. Strains/sprains 4. Inclement weather 5. Contact with poisonous plants 6. Crush/pinch hazards 7. Falls into water/drowning	1. 6 2. 6 3. 6 4. 10 5. 6 6. 6 7. 10	1. Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u> . Establish and maintain proper storage of materials. 2. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. 3. Suspend outdoor work during thunderstorms, heavy rain, snow, ice. 4. Keep hands and fingers away from close tolerance locations 5. All workers performing activities adjacent/on the water must wear a life preserver as provided in <u>S3AM-315-PR1</u> . 6. Assess site potential for contact with ticks and other insects. Conduct self-inspections or use insect repellents, as needed. Avoid/drain stagnate water areas. Refer to <u>S3AM-313-PR</u> for prevention and contact instructions.	1. 2 2. 2 3. 2 4. 3 5. 2 6. 2 7. 2
ACTIVITY 12 – Evaluation of Stability of Restored Stream Segment	1. Slips, Trips, Falls 2. Heat/cold stress 3. Strains/sprains 4. Inclement weather 5. Insect bites/stings 6. Contact with poisonous plants	1. 6 2. 6 3. 6 4. 10 5. 6 6. 6	1. Implement housekeeping protocols as outlined in <u>S3AM-013-PR</u> . Establish and maintain proper storage of materials. 2. Implement <u>S3AM-113-PR1</u> for prevention of heat-related illness and <u>S3AM-112-PR</u> for prevention of cold-related injuries as applicable. 3. Suspend outdoor work during thunderstorms, heavy rain, snow, or ice. 4. Identify and avoid areas where poisonous vegetation exists. Use light disposable coveralls and gloves and handle used PPE the same. 5. Assess site potential for contact with ticks and other insects. Conduct self-inspections or use insect repellents, as needed. Avoid/drain stagnate water areas. Refer to <u>S3AM-313-PR</u> for prevention and contact instructions.	1. 2 2. 2 3. 2 4. 3 5. 2 6. 2

SPECIAL REQUIREMENTS

Step #	Equipment to be Used	Inspection requirements	Training Requirements
	List equipment to be used in work activity	List inspection/permit requirements for work activity	List training requirements including hazard communication
1.	Level D PPE	Daily Serviceability Checks	Hazwopper 40 Hour
2.	Communication Equipment	Daily communication checks	Familiarity with the equipment. Knowledge of emergency response procedures.
3.	Fire extinguishers	Initial and monthly checks	Techniques for the use of the extinguishers
4.	First Aid Kit(s)	Weekly inspection/inventory	First Aid/CPR training current. Universal safety precautions for blood borne pathogens.
5.	PM Air Meter	Daily calibration	Familiarity with equipment and user manual.
6.	Hand tools	Inspect hand tools for serviceability	Use hand tools for their intended purposes. Familiarity with the equipment.
7.	Sample equipment/supplies	Inspect sampling equipment before going into field to ensure all parts are present. Use approved cutting devices (no FBOK). Watch for broken glass and acid preservatives.	Familiarity with the sample collection process and equipment
8.	Pump and other electrical devices	Pre-use to ensure no frayed/exposed wires or nearby water.	Familiarity with the equipment and shock hazards.
9.	Excavation equipment, drill rig, and other heavy equipment.	Pre-use inspection at least daily.	Only qualified subcontractors will operate the heavy equipment with all workers having stop work authority.

INSTRUCTIONS AND RISK MATRIX

Hazard Evaluation – Identify principal steps of the task. Identify potential safety/health hazards for each step and determine initial risk rating using the matrix provided below. Identify control measures including PPE for each hazard. Re-evaluate hazard potential and assign a final risk rating. If the final risk rating is a 5-9 (medium risk) or 10-25 (high risk), additional hazard controls shall be identified and applied until the final risk rating is reduced to 4 or below. The final risk rating cannot be reduced to 4 or lower, additional approvals are needed before the activity can begin. Add additional rows as required to cover all major steps/aspects of the activity.

Special Requirements – Identify equipment to be used including specific PPE required. Identify inspection requirements such as competent person, permit issue, documented task hazard analysis, etc. Identify training requirements such as hazard communication, scaffold user, fall protection, etc.

	Probability	Severity				
		5 - Catastrophic	4 - Critical	3 - Major	2 - Moderate	1 - Minor
		5 - Frequent	4 - Probable	3 - Occasional	2 - Remote	1 - Improbable
High		25	20	15	10	5
		20	16	12	8	4
		15	12	9	6	3
		10	8	6	4	2
Low		5	4	3	2	1
10-25 (red) are high risk, 5-9 (yellow) are medium risk, and 1-4 (green) are low risk						

	People	Property Damage	Environmental Impact	Public Image/Reputation
Catastrophic	Fatality, Multiple Major Incidents	>\$1M USD, Structural collapse	Offsite impact requiring remediation	Government intervention
Critical	Permanent impairment, Long term injury/illness	>\$250K to \$1M USD	Onsite impact requiring remediation	Media intervention
Major	Lost/Restricted Work	> \$10K to \$250K USD	Release at/above reportable limit	Owner intervention
Moderate	Medical Treatment	> \$1K to \$10K USD	Release below reportable limit	Community or local attention
Minor	First Aid	</\$1K USD	Small chemical release contained onsite	Individual complaint

Probability		
Frequent	Expected to occur during task/activity	9/10
Probable	Likely to occur during task/activity	1/10
Occasional	May occur during the task/activity	1/100
Remote	Unlikely to occur during task/activity	1/1,000
Improbable	Highly unlikely to occur, but possible during task/activity	1/10,000

Risk Rating (Probability x Severity)	Risk Acceptance Authority
1 to 4 (Low)	Risk is tolerable, manage at local level
5 to 9 (Medium)	Risk requires approval by Operations Lead/Supervisor & SH&E Manager
10 to 25 (High)	Risk requires the approval of the Operations Manager & SH&E Director